

Nutrition to Grow On

**A Garden-Enhanced Nutrition Education
Curriculum for Upper
Elementary School Children**

Second Edition



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Notice

The guidance in *Nutrition to Grow On: A Garden-Enhanced Nutrition Education Curriculum for Upper Elementary School Children (Second Edition)* is not binding on local educational agencies or other entities. Except for the statutes, regulations, and court decisions that are referenced herein, the document is exemplary, and compliance with it is not mandatory. (See Education Code Section 33308.5.)

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Curriculum for Upper
Elementary School Children

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Developed by
Jennifer Morris and Sheri Zidenberg-Cherr
Department of Nutrition, University of California, Davis

In collaboration with
the California Department of Education and Mary Shaw
Solano County Master Gardener, University of California Cooperative Extension



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Message from the State Superintendent of Public Instruction



On behalf of the California Department of Education, I am pleased to introduce the second edition of *Nutrition to Grow On: A Garden-Enhanced Nutrition Education Curriculum for Upper Elementary School Children*. The curriculum is a valuable resource to assist local educational agencies and after-school programs in implementing high-quality instructional programs in nutrition education.

Nutrition to Grow On is an innovative curriculum for grades four through six that offers teachers a direct link between the school garden and nutrition education. The curriculum uses the garden to integrate disciplines, including science, mathematics, language arts, history, environmental studies, nutrition, and health. This approach enriches students' capacities for observation and thinking and encourages them to develop a wide range of skills.

Research consistently demonstrates that students' academic achievement is directly linked to their nutrition and health status. Nutrition education is an important part of learning the essential skills necessary for a healthy lifestyle that includes healthy eating and regular physical activity.

I have long been a champion for students' health. Healthy students not only excel academically but also are more likely to be positively engaged in social, community, and extracurricular activities. The benefits of supporting student health are far-reaching. This is why, as State Superintendent of Public Instruction, I launched the Team California for Healthy Kids campaign: to make healthy choices the easy choices.

I trust you will find this publication useful and fun to implement. I look forward to hearing about the results of your nutrition education program.

Tom Torlakson

Tom Torlakson
State Superintendent of Public Instruction
California Department of Education



Nutrition to Grow On

Authors' Note

This curriculum was developed with the health and well-being of the nation's children in mind. Substantial evidence confirms that improving dietary and physical activity habits can optimize the health of children. Few children know the origins of their food or appreciate the importance of local agriculture to food production. Fortunately, educators are in a position to make a difference, and school gardens have become recognized as a possible solution. Gardens not only teach children where their food comes from but also expose them to a variety of fresh fruits and vegetables. This curriculum was developed to provide teachers with the necessary tools to bring life to this concept.

The original edition was the first curriculum of its kind to directly link nutrition with gardening activities in each lesson. The primary goal was to provide children and their caregivers with the knowledge and skills necessary to make healthful dietary choices while they gain a greater appreciation of the land that provides us with food. In 1991, the *Nutrition to Grow On* curriculum was presented the Award of Excellence by the National School Public Relations Association. Most recently, the curriculum was approved by the National Cancer Institute as a research-tested intervention program (RTIP). RTIPs are in a searchable database of cancer control interventions and program materials that provide program planners and public health practitioners with easy and immediate access to research-tested materials.

Although this curriculum was originally tested with upper elementary school children, educators of all grade levels have used it in their classrooms. This curriculum was developed with California's agricultural conditions in mind; however, we are confident that the activities described in this publication can easily be adapted to a variety of regions.

Many people helped complete the curriculum. We thank all the principals and teachers who allowed us to come into their classrooms to teach and evaluate the lessons. A special note of thanks is extended to their many students who also helped tremendously in the evaluation of the lessons. They quickly let us know which activities were enjoyable and which were not.

The following schools and teachers were involved in the initial pilot testing of the lessons:

Birch Lane Elementary School, Davis Joint Unified School District

Holiday Matchett, *Science Teacher*

Markham Elementary School, Vacaville Unified School District

Sharman Young, *Fourth-Grade Spanish Immersion Teacher*

Sheldon Elementary School, Fairfield-Suisun Unified School District

Lori Lawn, *Fourth-Grade Teacher*

The following schools and staff members were involved in the formal evaluation of the lessons:

Alamo Elementary School, Vacaville Unified School District

Julie Busher, *Principal, 1999–2000*

Janet Follett, *Principal, 1998–1999*

Janet Hardt, *Special Education Teacher and School Garden Coordinator*

Nancy Miller, *Fourth-Grade Teacher*

Note: The titles and locations of the persons included in this list were current at the time the first edition was produced.





Danielle Millward, *Fourth-Grade Teacher*
Stuart Russell, *Fourth-Grade Teacher*

Fairmont Elementary School, Vacaville Unified School District

Tom Armstrong, *Principal*
Andrea Booth, *Fourth-Grade Teacher*
Christopher Cooper, *Fourth-Grade Teacher*
Inge Dyrud, *Fourth-Grade Teacher*

Padan Elementary School, Vacaville Unified School District

Ruth Mickelson, *Principal*
Patty Anderson, *Fourth-Grade Teacher*
Paula Bradley, *Fourth-Grade Teacher*
Kristine Early, *Fourth-Grade Teacher*

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Dr. Harold Bush, *Deputy Superintendent, Education Services, Vacaville Unified School District*
Brenda Padilla, *Director of Child Nutrition, Vacaville Unified School District*

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Mary Shaw, *Program Education Chair, Solano County Master Gardener, University of California Cooperative Extension*. Mary shared her expertise with the students during most of the garden lessons.

The following master gardeners assisted in one or more of the garden lessons:

Meg Grumio—Weed Identification
Kathy Lane-Pratt—Bug Box Activity
Sandy Gainza—Dragonfly Activity
Jennifer Baumbach—Dragonfly Activity
Larry Clement, *County Director/Farm Adviser*

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Carol Hillhouse, *UC Davis Children's Garden Program Director*
Department of Pomology, University of California, Davis

Michelle Neyman, *Assistant Professor*
Department of Biological Sciences, California State University, Chico

Richard Ponzio, *4-H Specialist (Science and Technology Education), Director of 4-H Center for Youth Development, Department of Human and Community Development, University of California, Davis*

Judith S. Stern, *Professor, Departments of Nutrition and Internal Medicine, University of California, Davis*





Several evaluation forms sent home to the students' parents needed to be translated into Spanish. Translation was done by **Myriam Grajales-Hall**, ANR News & Outreach in Spanish, University of California Cooperative Extension.

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Graduate Students

Heather Graham
Peg Hardaway
Kristi Koumjian
Avtar Nijjer
Julie Schneider

Undergraduate Students

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Lisa Lee
Michelle Roe
Esther Wong
Courtney Zimmerman

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Heather Graham, *doctoral student*, Department of Nutrition, University of California, Davis, developed the matrix of the nutrition education curriculum and the California academic content standards. Her assistance is greatly appreciated.

Finally, the authors express gratitude to their family members and friends whose support was invaluable. This curriculum would not be making its way into the hands (and stomachs) of school-children everywhere were it not for that support.

Jennifer Morris, Ph.D.

Sheri Zidenberg-Cherr, Ph.D., Department of Nutrition, University of California, Davis





Introduction

Teachers are beginning to notice that all too often their students come to school hungry, show a significant drop in energy level during midmorning activities, and bring lunches that lack fruits and vegetables. This observation is a valid concern because research shows that when children come to school hungry, their potential to learn is affected. A recent review suggests that a child's brain is sensitive to short-term variations in nutrient intake (Bryan et al. 2004). In other words, what a child eats or does not eat affects his or her ability to learn. Current national recommendations promote diets high in fruits, vegetables, and whole grains but low in solid fats and added sugars (SoFAS) for persons two years of age and older (U.S. Departments of Agriculture and Health and Human Services 2010). Such diets provide the nutrients necessary for healthy growth and development and reduce the risk of chronic diseases. Unfortunately, children often eat insufficient amounts of fruits and vegetables and excessive amounts of less-nutrient-dense foods, which are generally high in SoFAS.

Some children understand why it is important to eat healthfully, but few know how, and even fewer are actually able to do so. In addition, few children truly know and appreciate where their food comes from. Many children believe their fruits and vegetables come in bags from the grocery store. Children need to be equipped with the knowledge of how to incorporate healthful foods into their diets and an appreciation for agriculture. However, children will not be able to go through this learning process alone; their caregivers need to be involved as well. Families need to learn that all foods can and do fit into a healthful diet and that the key lies in moderation and variety.

The two main objectives of this curriculum are to (1) teach upper elementary schoolchildren and their caregivers the importance of making healthful food choices and the way in which to do so; and (2) improve children's preferences for fruits and vegetables by giving children an opportunity to work with the land and grow their own produce. All lessons were tested prior to inclusion in this publication. (See Appendix A for details of the testing process [Morris, Briggs, and Zidenberg-Cherr 2002].)

For a curriculum to be effective, research shows that it should be based on sound theoretical principles. This curriculum is based on the social cognitive theory (SCT)—the belief that children's behavior is influenced by several factors. Personal (e.g., knowledge), behavioral (e.g., skills), and environmental (e.g., visual reinforcement) factors are believed to influence children's health-related behaviors, such as dietary choices (Bandura 2004). Young children are greatly influenced by their surroundings, so the curriculum uses the environment to stimulate learning about nutrition and academic subjects, such as science and mathematics. This curriculum teaches children about nutrition while taking them through the steps of planting, maintaining, and harvesting their own vegetable garden. Garden activities have been incorporated into the lessons to teach children more about where their food comes from and reinforce the principles of the SCT. Another benefit of having a garden at a school is that it is a constant visual reminder that good nutrition is important even on those days when no nutrition lessons are formally presented.

Curriculum Principles

The principles guiding the development of this curriculum were simple. The lessons had to be fun, easy to implement, integrative, and adaptable.





Fun. First and foremost, the curriculum is meant to be fun and interactive for the students and the teachers. Children must be constantly stimulated. No one would continue with a healthful lifestyle if he or she saw it as nothing more than another chore.

Easy to implement. The authors wanted to make the curriculum easy for teachers to use; therefore, preparation time is minimal. Most of the lessons require few materials to be gathered or prepared prior to the activity. Detailed background information is included in each lesson so that little additional research, if any, is needed.

Integrative. From the first day of school to the last, teachers are asked to teach their students according to a set of standards or a curriculum framework. Standards are necessary to establish consistency among teachers and schools in many regions. Some of the standards were incorporated into this curriculum so that teachers would not feel as though they needed to add yet another activity to an already full schedule. This curriculum was developed with the California content standards and curriculum frameworks in mind. The lessons offer students opportunities to practice the skills called for in the content standards. (Appendix B shows the academic content standards supported by each lesson.)

Adaptable. The dynamics of all classrooms are unique. What works in one classroom may not work in another. Another requirement for this curriculum was that it had to be adaptable to any educational situation. The hope is that teachers take what they wish from these lessons to make them fit their own classroom. The lessons have enough structure to be taught exactly as written but also have enough flexibility to be modified as needed. In addition, the lessons include enough activities to provide a challenging environment for older children but may be broken down into much simpler activities for younger children.

Organization of the Curriculum

The curriculum is divided into nine lessons on topics related to a healthy lifestyle. Although the lessons were developed to build on one another, they may also be taught independently. Enough information is presented for each lesson to be taught exactly as is. However, teachers are encouraged to adjust lessons to better fit the dynamics of their individual classrooms. Because the lessons are designed to build on one another, they should be taught in the order presented in this curriculum. The earlier lessons lay the groundwork for subsequent activities.

Each lesson was developed with several objectives in mind, most of which are behavioral in nature. They are noted on the first page of each lesson along with an objective for the hands-on gardening activity. The materials needed for the nutrition lesson and gardening activity are noted for each lesson as well. Changes are encouraged if they make the lesson appropriate for a given classroom. All the necessary handouts are included at the end of the lesson.

All lessons begin with a brief review of the previous lesson. Sometimes this material is necessary for the activities that follow. If these lessons are presented independently of each other, make sure that the students have ample background knowledge to be able to perform the learning activities.





The nutrition portion of each lesson is intended to last approximately one hour, and the hands-on gardening activity may be taught in about 30 minutes. Most activities can be modified to increase or decrease the duration of the lesson. The nutrition and gardening activities are meant to be complementary and function as a form of reinforcement. During the formal evaluation of this curriculum, the gardening activities were taught within a day of the nutrition lesson. Although the length of time between the two activities may vary among individual classes, the nutrition lessons could be taught within a week of gardening activities. Selected hands-on gardening activities may be taught without students going through the actual planting and harvesting of a vegetable garden; however, omitting the hands-on activities may not be as beneficial to the students.

If the hands-on gardening activities are to be taught along with the nutrition lessons, it may be better to teach the lessons together on alternate weeks. Such scheduling allows ample time for the growth of most crops. Be sure to check the approximate length of time until you harvest the crops you choose to plant, because that will determine when you begin teaching the lessons and when the students can make snacks from the food they grow.

The “Additional Activities” section in each lesson contains ideas for follow-up and an optional snack. The last section, “Background Information,” provides teachers with additional information about the lesson.

Each lesson includes a sheet of “10 tips” and should be sent home to the students’ families within a few days of the lessons being taught in class. The purpose of the tip sheets is to educate the students’ families about the material students are learning in class and promote family discussion about healthful eating choices. There is substantial evidence that parental involvement is necessary for the success of any educational program. The more that caregivers are involved in their children’s education, the more the children will appreciate the importance of what they are learning.

Tips on Starting a Garden

Starting a garden at a school can be a very easy task. There are a few things to consider, however, when planning the garden. First, school administrators must be contacted to gain their support and to find out whether there are any site regulations. Talk to the principal, vice principal, janitors, and other maintenance staff who need to be informed of the garden project. Second, the size of the area you need will depend on your desired level of gardening. The garden may range in size from a couple of pots on a windowsill to a 10-foot-by-4-foot raised bed. Third, the location of the garden is important. It must allow sunlight each day. Fourth, the condition of the soil must be determined. If the soil was already used to grow crops, some additional nutrients may be needed. However, you may need to start fresh with brand-new soil if nothing is currently growing in it. Last, determine how you will get water to your crops. Watering can be done with cans, hoses, or a drip irrigation system.

If you are unsure about any of these steps, consult a local nursery or master gardener through your county Cooperative Extension. You may even be able to find a knowledgeable parent at the school who is willing to help in the planning stages. In addition, it is a good idea to contact other members of the community. Many people may be able to donate labor, money, or supplies to help get the garden ready.



Assessment

Assessment is built into this curriculum. Nutrition quizzes are aligned with the objectives for each lesson (see Appendix C). Teachers may use these quizzes, as they deem best. For example, teachers may ask students questions after each lesson, give the whole set to the student once all the lessons have been taught, or distribute the questions before and after teaching the lessons to determine changes in the students' knowledge. It is recommended that teachers read aloud the questions to students below fourth grade if students cannot read with proficiency.

Another idea for assessment of students' learning is to have the students keep journals or notebooks. Ask students to write about their various food and garden-related experiences. At various times during the lessons, the students may also keep track of the foods they eat for one day. At the end of the project, students can go back and compare their diets to MyPlate recommendations (see Lesson 3). Ask them to look for any improvements in their diets. You may also have students keep track of any new vegetable they try and record what they thought of it. Research shows that children often take 10 to 15 tries before they begin to like a new food (Birch et al. 1987; Blanchette and Brug 2005; Robinson-O'Brien, Story, and Heim 2009).

These are only a few ideas for assessment. Teachers are encouraged to do whatever works best in their classrooms.

Suggested Teaching Strategies

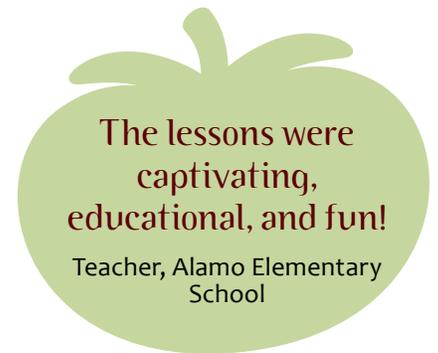
Before beginning this project, check the students' emergency information cards for any known allergies. Such information may influence the snacks prepared or the vegetables selected for planting. The following strategies for teachers are suggested to maximize the value of these lessons for the students:

- Mention healthy lifestyle habits in regular classroom discussions by using food, exercise, and garden-related examples whenever possible. For example, teach fractions by cutting an apple into pieces instead of using a circle. Do not wait for the occasional nutrition lesson to emphasize the importance of good health.
- Work with the nutrition services staff at the school. Consider arranging a tour of the cafeteria or ask a staff member to visit the classroom to help during a cooking activity. This strategy helps to strengthen the link between the classroom lessons and the lunchroom. Often a student's most healthful meal of the day is the one received from the school cafeteria.
- Include the following health-related questions as daily journal topics: What does it mean to be healthy? What are some things that I can do to stay healthy? What are some foods that I can choose as healthful snacks? Why would they be considered healthful? How can I make them a part of my daily routine? What are some activities that I like to do that keep my body moving?
- Post nutrition-related news and activities on a bulletin board. Consider displaying the MyPlate poster in the classroom throughout the year.





- Remember that it is important for teachers to be good role models. All foods can be included in a healthful diet; there are no good or bad foods, just good or bad diets. Teachers should try to include fruits and vegetables in their own snacks and lunches.
- If students bring their own snacks or lunch to school, encourage them to bring healthful items. Once a week, have the students talk about what they brought and why and brainstorm on other choices for snacks and ways to eat them. Be sensitive to the fact that some students will have a difficult time bringing in particular foods.
- Encourage students to bring healthful snacks for class parties. Try 100 percent real fruit juice instead of sodas, and offer pretzels or popcorn instead of potato chips. Other ideas include graham crackers or cut-up fruits and vegetables to go along with pizza. What about trying a pizza with vegetables on it? Check out the lesson on snack making (Lesson 9) and some children’s cookbooks for more ideas of snacks that can easily be made in the classroom.
- Do not use food as a reward. Consider classroom items, such as pencils, erasers, or notebooks. If a garden is planted as part of the lessons, some students will consider it a reward to go out to the garden at a designated time every day.
- Impress upon the students that they should look at their diets over the course of a few days and not just one day or meal at a time. If the diet is a little higher in fat one day, the diet the next day should be lower in fat.
- Consider long-term class goals when doing the gardening activities. It may be possible to plant a themed garden relevant to upcoming topics during the year. Consider also what snacks you can make when the garden is ready for harvest. The goal is to allow the students to taste everything they grew during the year. You may need to speak to a local master gardener or nursery for ideas that work with the local climate and the timing of planting.
- If a class decides to plant a garden, walk the class by the garden daily (for example, on the way to or from recess) to keep track of the garden’s progress.
- Have a parent or master gardener come into the classroom to assist on the days of the gardening activities. It helps to have an extra adult or two in the garden during the outdoor activities.
- Add “gardener” to the list of class roles. One student or several may be assigned the responsibility of keeping an eye on the garden and watering or weeding when necessary. He or she can check the garden and inform the class when something new sprouts.
- Encourage the community to get involved with the school garden. Local businesses may be able to donate money, labor, or resources to get the project operating.



Appendix D, “Nutrition Education Resources,” contains a list of helpful Web sites and professional associations.



Lesson 1

Nutrition and Gardening

OBJECTIVES

- ☺ To understand what humans and plants need for survival
- ☺ To learn the origin of our food
- ☺ To learn about the parts of plants, emphasizing those that we eat
- ☺ To learn how to plant seeds and grow them successfully

APPLICABLE CONTENT STANDARDS

- ☺ English–language arts
- ☺ Science

(See the matrix in Appendix B.)

Materials for In-class Lesson and Activities	Materials for Gardening Activity
<p>Handouts:</p> <ul style="list-style-type: none">1-1 Charades (one copy/class)1-2 Plant Parts1-3 Crossword Puzzle“10 tips” (with the letter to parents or guardians) <p>Colored folders (for students to store handouts from these lessons)</p> <p>Foods noted on handout 1-2 (one from each part of the plant)</p> <p>Fresh Fruit and Vegetable Photo Cards (see Appendix D under “California Department of Education” for ordering information)</p> <p>Seed packets (optional)</p>	<p>Handouts:</p> <ul style="list-style-type: none">1-4 My Seeds and My Predictions1-5 Mini-Greenhouse Care Chart (one copy/class) <p>Mini-greenhouses (72 cells/tray; one tray/class) — see “Additional Activities” for other greenhouse options</p> <p>Potting soil mix (two bags, 3–5 lb. each)</p> <p>Seeds (check with a master gardener or local nursery for crops that would be successful in your area)</p> <p>Hand shovels or trowels</p> <p>Plastic tarp</p> <p>Wooden popsicle sticks</p> <p>Permanent marker</p> <p>Adhesive tape or glue</p> <p>Paper towels</p> <p>Spray bottle</p>





Preparation for In-class Lesson and Activities	Preparation for Gardening Activity
<p>Day before the lesson:</p> <p>Photocopy handouts 1-1 (one copy), 1-2, 1-3, and “10 tips” (one copy/student).</p> <p>Gather materials.</p> <p>Cut up charades slips (handout 1-1). Prepare five or six stacks of the Fruit and Vegetable Photo Cards. Each stack should have one picture of each plant part. Optional: A seed pack may replace a photo card.</p>	<p>Day before the lesson:</p> <p>Photocopy handouts 1-4 and 1-5.</p> <p>Discuss with the students which fruits and vegetables they would like to grow. Look into which would grow in the region and the time frame desired.</p> <p>Gather materials.</p> <p>Cut each mini-greenhouse tray into eight smaller trays.</p> <p>Moisten potting soil with water in a small bucket; keep about one cup of the mix completely dry and get one cup soaked (for demonstration purposes).</p>
<p>Just before the lesson:</p> <p>Organize students into five or six groups.</p>	<p>Just before the lesson:</p> <p>Set up for the gardening activity in a corner of the room (tarp, greenhouses, soils, seeds, handouts).</p>

Nutrition Lesson Activities

(60 min.)

1. Introduction and icebreaker

 **Brainstorming.** Our bodies are made up of many different parts that do many things for us every day. Who can name a few things that our bodies do every day? What part of our body is working?

- | | |
|--|--|
|  Move (<i>muscles</i>) |  Grow (<i>muscles, bones</i>) |
|  Eat (<i>digestive tract</i>) |  Drink (<i>digestive tract</i>) |
|  Play (<i>muscles</i>) |  Learn and think (<i>brain</i>) |
|  Pump blood (<i>heart</i>) | |
|  Heal wounds (<i>cells</i>) | |
|  Sleep (<i>whole body</i>) | |
|  Breathe (<i>lungs</i>) | |

Can your students think of any others?

 **Game of charades.** Look more closely at five things our bodies need to perform all the tasks just discussed. (The class should already be divided into five groups.)

-  Give each group a slip of paper (from handout 1-1) indicating one thing that our bodies need.
-  Groups should get only about one minute to work on their charade, so they must make it simple.





- After a minute, bring the groups back together. Have each group present its charade to the rest of the class while the other students guess the charades.
- Write the correct answers on the board. Discuss why our bodies need these things and write key words on the board (underlined below).

- Food.** Provides our bodies with energy
- Air.** Provides our bodies with oxygen that is needed by organs such as our brains to function (We breathe in oxygen and breathe out carbon dioxide through the process of respiration.)
- Water.** Helps to keep our body temperature normal and our blood flowing
- Exercise.** Helps to keep our muscles strong, especially our hearts
- Sleep.** Gives our bodies a chance to rest and prepare for another day of activities

2. A close look at food

- Ask each student in the classroom to tell the class his or her favorite food. (Limit each student to only one food.) Chart the number of times each food is mentioned. That is only a small portion of the total number of foods that are available to us.
- Take a closer look at where some favorite foods come from. Map the production history of the most popular favorite food on the board (e.g., pepperoni pizza). Keep it simple, direct, and to the point. Ask the students where different components come from; for example, what is the crust made of? Where does the dough come from? The objective is to trace each item all the way back to *plants* and *animals*.

Pepperoni pizza example

Crust → dough → flour → plants

Tomato sauce → tomatoes → plants

Cheese → milk → cow (A cow must eat plants to have the energy needed to produce milk.)

Pepperoni → pig (A pig must eat some plant products in order to grow.)

- Tell the students to focus on plants. Plants need food, air, and water just as our bodies do.



Food. Plants make food from carbon dioxide (CO₂), water, and light through the process of photosynthesis; plants also need other compounds/nutrients that can be found in the soil.

Water. Plants need water to grow; they pull it from the soil through their roots.

Air. Plants need CO₂ from the air that we exhale—and they release oxygen (O₂), which we need to breathe, through the process of photosynthesis.

Sunlight. The sun provides the plants with the energy needed to complete the process of photosynthesis.



3. A close look at plant parts

- Now that we know we eat plants, let's take a closer look at the different parts of plants that we eat.
- Distribute the Plant Parts handout (1-2). Also distribute five or six Fresh Fruit and Vegetable Photo Cards to each of the five groups. (Each group should receive one photo of each plant part, if possible.) Have a student read the function of a root. Show the students an example of a root that we eat (see the list on page 14). Then have each group figure out which of their photos shows a root. Have the group hold up the picture for the rest of the class. Meanwhile the rest of the group members should write the name of the food in their photo in the third column of the handout. Have the class identify similarities between foods from the same plant part. Ask students if they can name any other foods that come from that part of the plant. Repeat with the remaining plant parts.
- At the end of the activity, have students place pictures of similar plant parts together in different areas of the room. Allow students time to look at the different plant parts grouped together. Can they tell which plant part they are looking at? Have the students fill in the names of the foods by the correct plant part in the plant-part handout.

4. Review activity

- Crossword puzzle activity (handout 1-3)

Gardening Activity

(30 min.)

Become a farmer! There are several considerations before you begin this activity. First, decide what seeds you will plant. Check with local master gardeners, farm advisers, nurseries, or the planting guides for your region. Consider the climate, time of planting, and the time of harvest. Then decide which crops you would like to harvest at the end of the project. Healthful snacks will be made in lesson 9, and recipes are provided. The recipes may give you some ideas as to which seeds to plant. Last, some seeds need to be started in small containers and then transplanted outdoors when they have grown a couple inches (e.g., broccoli, leafy greens); other plants do better when seeded directly into the ground from which they will be harvested (e.g., carrots, radishes). Read the seed packets to learn more about the planting of the seeds.

In this group activity, students will plant seeds in a mini-greenhouse tray. Work with no more than half of the class at a time. (It is possible to work with as many as 12 to 14 students at a time.) Students not planting may work on handout 1-3.

- Distribute the My Seeds and My Predictions handout (1-4). Have students draw a picture of the seeds they plant and make predictions of what the plant will look like when fully grown. (They can get ideas from the seed packet.) These predictions are just guesses! Have each student get a seed from one other student and repeat the process. Students should be drawing when not working on their gardening task. Have students list the part of the plant they can eat at harvest time.





- Start a group discussion. Explain the parts of the activity: the seeds, greenhouse, soil, water, and planting. All parts are equally important for a successful harvest. Have the students predict what might happen if one part were left out.
- Begin planting. Have the group sit on a tarp if working indoors or on the lawn if outdoors. Number the students by fours. One adult can work with four students per group at each tray and no more than four groups at a time. Explain the importance of each of the following steps as it is completed:
 - (Student 1)** Fill the cells loosely with soil. Do not pack the soil down tightly or else the seeds will suffocate. The soil must not be too soggy or too dry. (Bring in soil samples that are too wet and samples that are too dry.)
 - (Students 2 and 3)** Plant seeds, but not too deep. Read the seed packets to determine the number of seeds per cell and the planting depth. (You will almost always plant one seed per cell for transplant purposes.) Do not pack the soil down; the seeds need air.
 - (Student 4)** Label the tray by writing the seed name on a popsicle stick and taping or glueing on some seeds.
- Explain the importance of checking the plants daily. Keep track of progress on the Mini-Greenhouse Care Chart (handout 1-5).

This activity can easily become a science experiment. Have the students set up different environments and make predictions about what might happen to the seedlings. The students can put photosynthesis to the test. Always include at least one tray that gets the ideal conditions (just the right amount of light, water, and air). This group, called the *control group*, will provide your class with some plants that can be transplanted outdoors in a few weeks. Do only two or three of the following experiments per class. Have the students keep track of their experiments for at least two to four weeks and record any differences observed between the experimental and control groups. The following are suggested experiments:

1. Skip one of the garden steps listed above or perform a step out of order. What effect would it have on the growth of the plant?
2. Place a dark lid over one section of the greenhouse so that no light will get in, but be sure to continue watering the plants when necessary. Can the plants grow without any light at all? (Mushrooms are an example of plants that can grow in the complete absence of light.)
3. Place a dark lid over one section of the greenhouse so that no light will get in; this time, cut a one-inch hole in one side of the lid. Make sure you still continue watering the plants when necessary. In which direction will the plants grow? (Students can notice phototropism at work.)
4. Do not water one section of the greenhouse at all (underwatering), but continue to provide adequate light. What happens to the seedlings?
5. Water one section of the greenhouse twice a day (overwatering), and continue to provide adequate light. What happens to the seedlings?
6. Try different combinations of any of the environments noted above.



7. Ask students the following questions: How might the temperature affect the growth of the seedlings? How might sound affect the growth of the seedlings?

Additional Activities

1. Snack idea: Have a taste test party that includes foods from different parts of the plant. (See the table on page 14.) Have the students record which part of the plants they prefer and why.
2. Discuss human anatomy in greater detail. Pay particular attention to the digestive tract. This lesson provides an excellent opportunity to tie in lessons on the human body.
3. Have students write down all of the foods they ate for lunch. Next to each food, have students note whether the food came from a plant or an animal. If it was from a plant, which part?
4. Assign a plant part to each group of students and have students tell the class about it in greater detail.
5. Have students write reports on the history of their favorite foods.
6. Have the students write a story about their planting experience. (This writing activity provides them with practice in the language arts.)
7. Have the students find out the name of the seedlings in various languages (e.g., Latin, Spanish, Japanese) for an additional language lesson.
8. Have the students research the “history” of one of the seeds/plants that is growing in the garden. Doing research is a skill used in science.
9. Watch different parts of the plant at work with either or both of the following activities:
 - a. This activity will demonstrate the vascular system of the plant stem. Place five to 10 drops of red food coloring in a clear cup full of water. Take a fresh stalk of celery and cut about one inch off the bottom. Place the cut end into the colored water. Let the cup and celery sit in the sun for a few hours. Watch the colored water moving up the stalk. Older students can chart and plot the rate at which the water rises in the stalk. Ideally, this project should be done in the morning so students can see the progress over several hours.
 - b. Take the peas out of fresh pea pods. Line the inside of a clear cup with a wet paper towel. (The paper towel should cover the inside of the cup from the bottom almost all the way to the top.) Then carefully place two or three peas between the paper towel and the side of the cup about halfway up the side of the cup. Make sure that the peas are spaced about one inch apart. Set the cup in a sunny place and watch the root systems start to grow. Check daily and add a small amount of water to the cup as soon as the paper towel starts to dry out.
10. Consider when you will be planting the seeds before you begin. Some plants grow better at particular times of the year than others. Warm-weather plants tend to be those that grow above the soil and can withstand hot days (e.g., tomatoes, pumpkins). Cool-weather plants are those that generally grow underground or cannot withstand hot days (e.g., radishes, spinach). Discuss which plants grow when and why. Make a planting calendar for the class.





11. Encourage students to keep track of the sprouting rate of their plants by taking measurements on alternate days. Students can also continue to make predictions. A math lesson can be incorporated into the lesson by graphing or charting the average rate of growth for each type of seed or calculating the percentage of seeds sprouting each week. Discuss factors that promote sprouting (optimal temperature, water, and light conditions) and that vary between plants.

Background Information

Bulb. An underground bud that sends down roots and consists of a very short stem covered with leafy scales or layers, as in an onion.

Flower. Reproductive organ of a plant that attracts insects and animals to promote pollination and seed dispersal.

Fruit. Part of a plant that grows from the flower and contains seeds. The fruit generally protects the seeds of a plant. Edible fruits that are not sweet are sometimes called vegetables (e.g., tomatoes, bell peppers, cucumbers).

Hydrotropism. The ability of a plant's roots to grow toward water.

Leaf. Site of food production for the plant through the process of photosynthesis.

Nutrient. Substance that our bodies need to help us grow and stay healthy (will be discussed in more detail in Lesson 2).

Photosynthesis. The process by which a plant uses water, carbon dioxide (CO_2), sunlight (energy), and nutrients from the soil to make food. This occurs in the leaves within the chlorophyll-containing cells (food-manufacturing site). Sugar is produced and stored in the leaves until it is needed for growth or maintenance. Oxygen (O_2) is the byproduct released by a plant when it makes food. Oxygen is inhaled by humans and animals, who in turn release CO_2 . The cycle continues in this fashion.

Phototropism. The ability of a plant to grow toward light.

Root. Part of the plant that absorbs water and nutrients from the soil and anchors the plant in the ground.

Seed. Contains the embryonic plant along with all the nutrients required for the plant to start growing.

Stem. Supports the plant and transports water and other nutrients throughout the plant.

Tuber. A short, thickened, fleshy part of an underground stem, such as a potato. New plants develop from the buds, or eyes, that grow in the axils of the minute scale leaves of a tuber.

Vegetable. General term used to describe a plant that is grown for food. Plant parts that we eat and that are not fruits are roots, stems or stalks, leaves, flowers, and seeds.



Handout 1-1

Charades: What Our Bodies Need

Instructions: Cut out the five statements below on the dotted lines. Divide the class into five groups and give each group one statement. Each group must come up with a simple charade to share with the class. After about one minute, all groups should come back together and try to guess one another's charades. These are five things our bodies need every day.

Our bodies need exercise!

Our bodies need food!

Our bodies need air!

Our bodies need water!

Our bodies need sleep!



NAME: _____

DATE: _____

Handout 1-2
Plant Parts

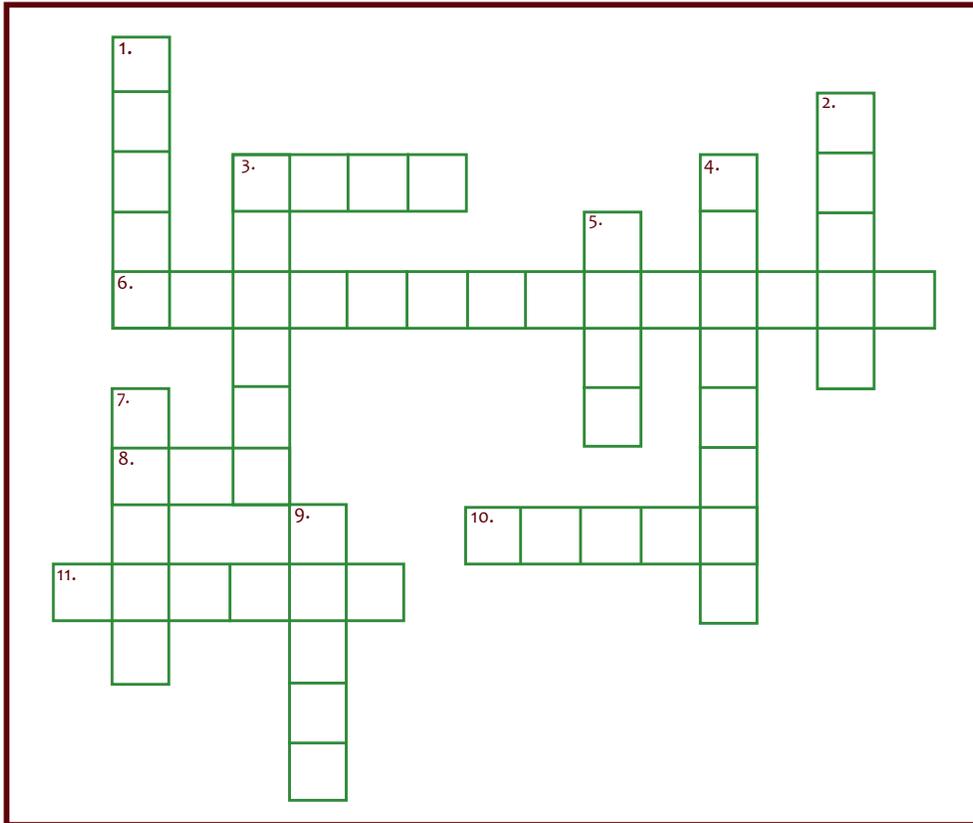
Plant Part	Function	Examples of Edible Plant Part
Roots	<ul style="list-style-type: none"> ☛ Pull water and other nutrients from the soil <p>Hydrotropism—Roots grow toward water.</p>	Parsnip
Stem	<ul style="list-style-type: none"> ☛ Moves water and other nutrients from the roots to the rest of the plant <p>Phototropism—The stem grows toward light.</p>	Kohlrabi
Leaf	<ul style="list-style-type: none"> ☛ Produces food <p>Photosynthesis—The leaves use water, air, and sunlight to make the food that the plant needs.</p>	Mint
Flower	<ul style="list-style-type: none"> ☛ Makes the plant’s seeds 	Artichoke
Fruit	<ul style="list-style-type: none"> ☛ Protects the plant’s seeds ☛ Any food with seeds in it 	Bell pepper
Seed	<ul style="list-style-type: none"> ☛ Contains a plant ☛ Is usually protected inside the fruit 	Rice



NAME: _____

DATE: _____

Handout 1-3 Crossword Puzzle



Across

3. You need to eat _____ every day for energy.
6. How do plants make their own food using water, air, and sunlight?
8. The _____ you breathe gives your body the oxygen it needs.
10. _____ usually grow underground and take up water from the soil.
11. _____ are the part of the plant where photosynthesis takes place.

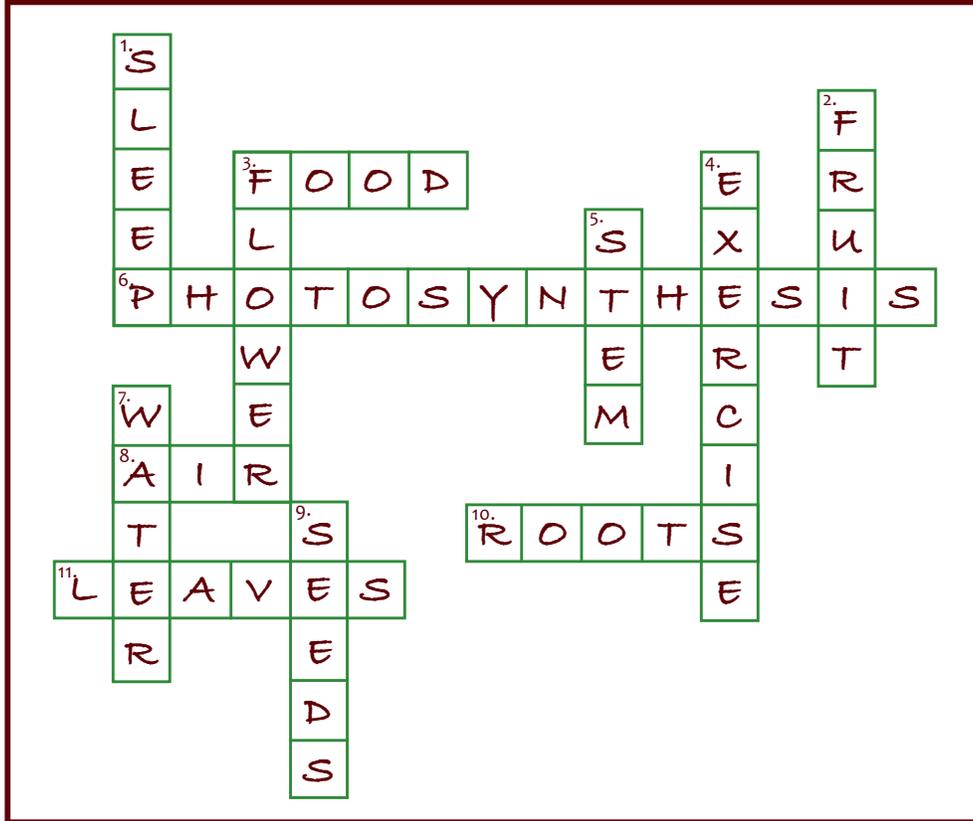
Down

1. What must you do every night to prepare for the next day?
2. The part of the plant that *holds* and protects the seeds.
3. The part of the plant that *makes* the seeds.
4. A little of this every day will help keep your muscles strong.
5. The part of the plant that moves water and other nutrients from the roots to the leaves.
7. You need to drink this every day to help keep your body cool.
9. Rice, corn, and peas are examples of this plant part.



Handout 1-3

Crossword Puzzle—Answer Key



Across

3. You need to eat **FOOD** every day for energy.
6. How do plants make their own food using water, air, and sunlight? **PHOTOSYNTHESIS**
8. The **AIR** you breathe gives your body the oxygen it needs.
10. **ROOTS** usually grow underground and take up water from the soil.
11. **LEAVES** are the part of the plant where photosynthesis takes place.

Down

1. What must you do every night to prepare for the next day? **SLEEP**
2. The part of the plant that *holds* and protects the seeds. **FRUIT**
3. The part of the plant that *makes* the seeds. **FOOD**
4. A little of this every day will help keep your muscles strong. **EXERCISE**
5. The part of the plant that moves water and other nutrients from the roots to the leaves. **STEM**
7. You need to drink this every day to help keep your body cool. **WATER**
9. Rice, corn, and peas are examples of this plant part. **SEEDS**





NAME: _____

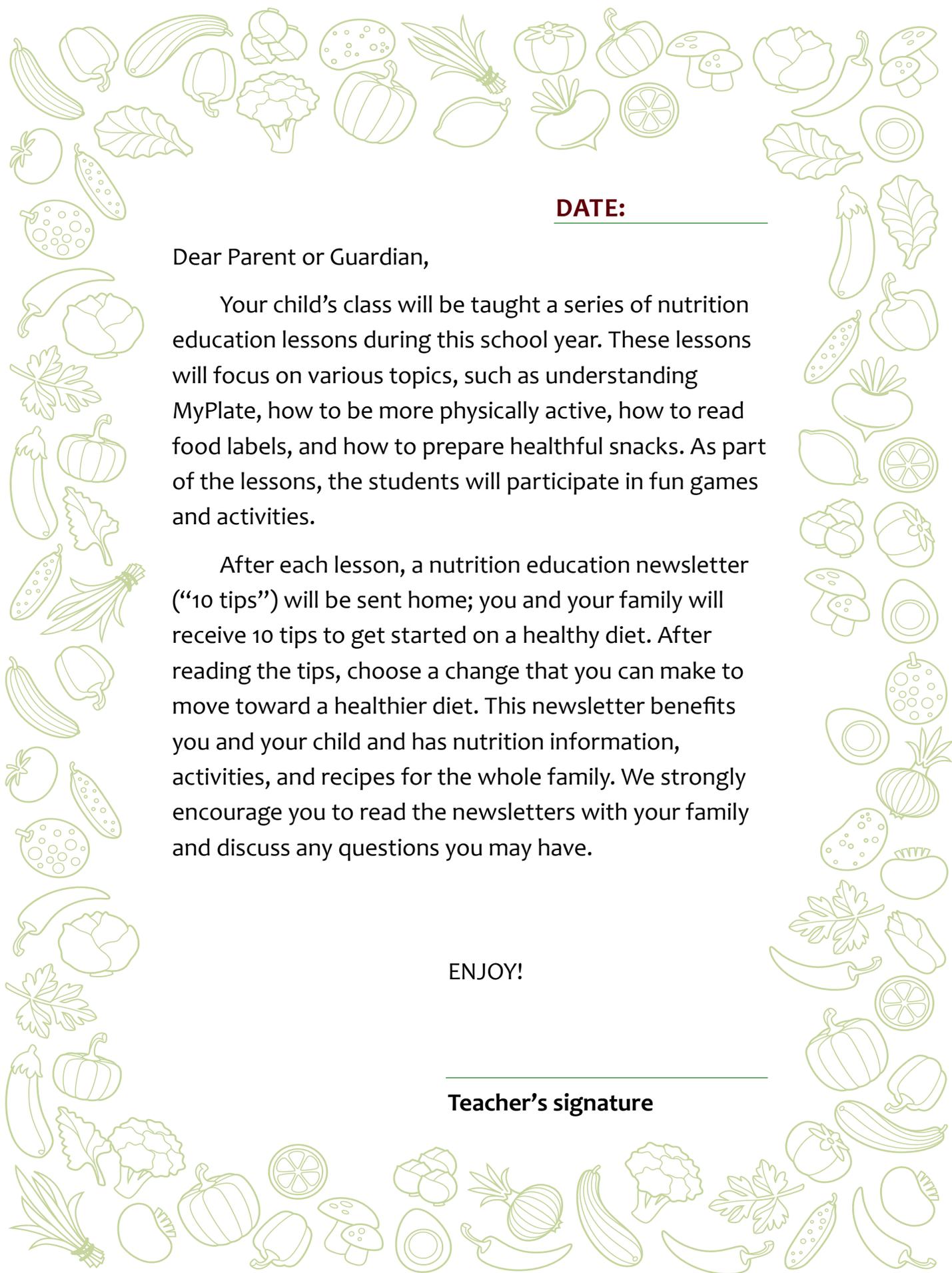
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Handout 1-4

My Seeds and My Predictions

Seed name:	Part of the plant I will eat:
What my seed looks like	What my plant will look like

Seed name:	Part of the plant I will eat:
What my seed looks like	What my plant will look like



DATE: _____

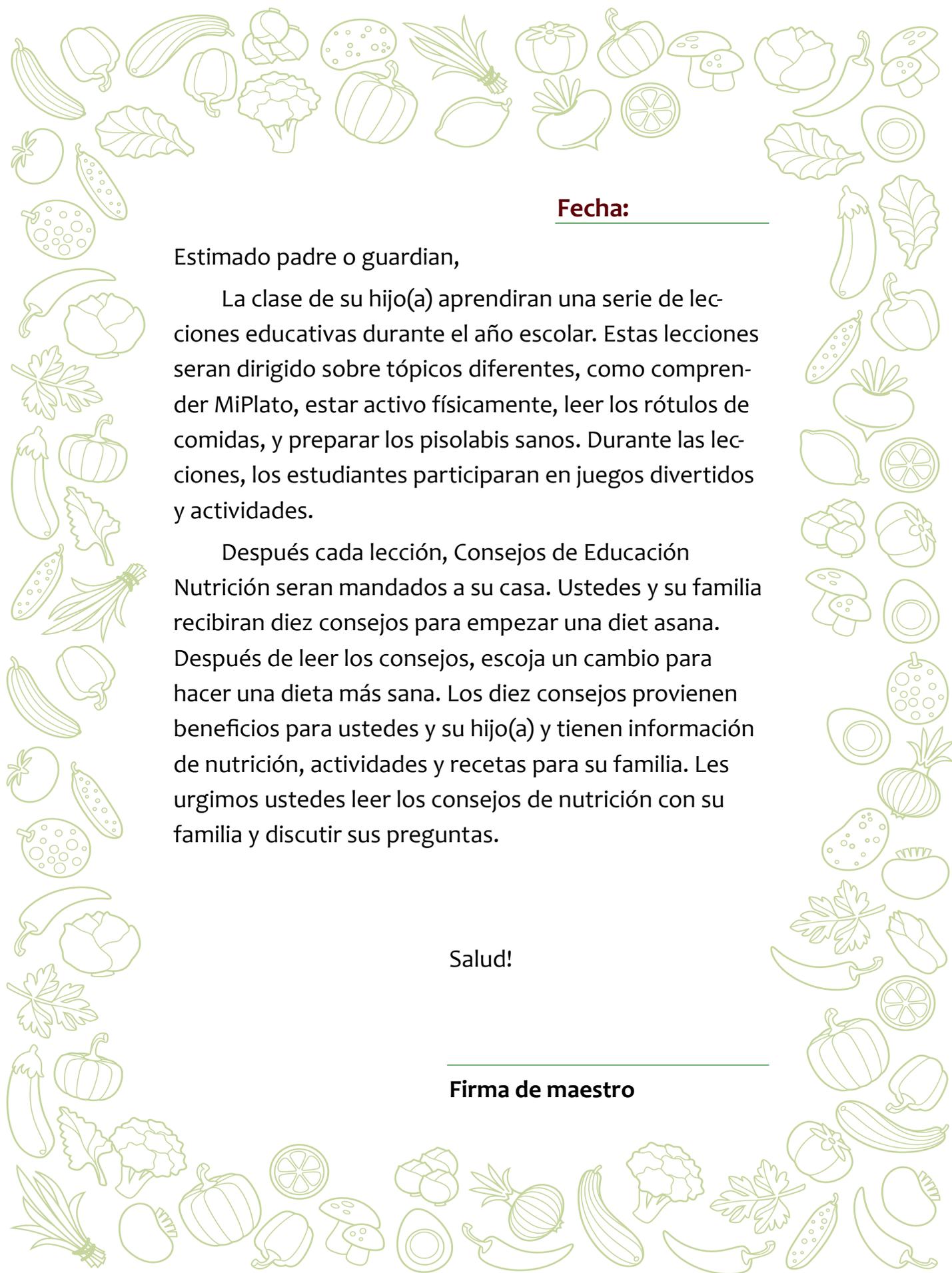
Dear Parent or Guardian,

Your child's class will be taught a series of nutrition education lessons during this school year. These lessons will focus on various topics, such as understanding MyPlate, how to be more physically active, how to read food labels, and how to prepare healthful snacks. As part of the lessons, the students will participate in fun games and activities.

After each lesson, a nutrition education newsletter ("10 tips") will be sent home; you and your family will receive 10 tips to get started on a healthy diet. After reading the tips, choose a change that you can make to move toward a healthier diet. This newsletter benefits you and your child and has nutrition information, activities, and recipes for the whole family. We strongly encourage you to read the newsletters with your family and discuss any questions you may have.

ENJOY!

Teacher's signature



Fecha: _____

Estimado padre o guardian,

La clase de su hijo(a) aprendiran una serie de lecciones educativas durante el año escolar. Estas lecciones seran dirigido sobre tópicos diferentes, como comprender MiPlato, estar activo físicamente, leer los rótulos de comidas, y preparar los pisolabis sanos. Durante las lecciones, los estudiantes participaran en juegos divertidos y actividades.

Después cada lección, Consejos de Educación Nutrición seran mandados a su casa. Ustedes y su familia recibiran diez consejos para empezar una diet asana. Después de leer los consejos, escoja un cambio para hacer una dieta más sana. Los diez consejos provienen beneficios para ustedes y su hijo(a) y tienen información de nutrición, actividades y recetas para su familia. Les urgimos ustedes leer los consejos de nutrición con su familia y discutir sus preguntas.

Salud!

Firma de maestro

10 tips

Nutrition Education Series

be a healthy role model for children



10 tips for setting good examples

You are the most important influence on your child. You can do many things to help your children develop healthy eating habits for life. Offering a variety of foods helps children get the nutrients they need from every food group. They will also be more likely to try new foods and to like more foods. When children develop a taste for many types of foods, it's easier to plan family meals. Cook together, eat together, talk together, and make mealtime a family time!

1 show by example

Eat vegetables, fruits, and whole grains with meals or as snacks. Let your child see that you like to munch on raw vegetables.

2 go food shopping together



Grocery shopping can teach your child about food and nutrition. Discuss where vegetables, fruits, grains, dairy, and protein foods come from. Let your children make healthy choices.

3 get creative in the kitchen

Cut food into fun and easy shapes with cookie cutters. Name a food your child helps make. Serve “Janie’s Salad” or “Jackie’s Sweet Potatoes” for dinner. Encourage your child to invent new snacks. Make your own trail mixes from dry whole-grain, low-sugar cereal and dried fruit.

4 offer the same foods for everyone

Stop being a “short-order cook” by making different dishes to please children. It’s easier to plan family meals when everyone eats the same foods.

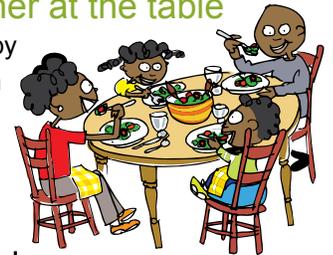


5 reward with attention, not food

Show your love with hugs and kisses. Comfort with hugs and talks. Choose not to offer sweets as rewards. It lets your child think sweets or dessert foods are better than other foods. When meals are not eaten, kids do not need “extras”—such as candy or cookies—as replacement foods.

6 focus on each other at the table

Talk about fun and happy things at mealtime. Turn off the television. Take phone calls later. Try to make eating meals a stress-free time.



7 listen to your child

If your child says he or she is hungry, offer a small, healthy snack—even if it is not a scheduled time to eat. Offer choices. Ask “Which would you like for dinner: broccoli or cauliflower?” instead of “Do you want broccoli for dinner?”

8 limit screen time

Allow no more than 2 hours a day of screen time like TV and computer games. Get up and move during commercials to get some physical activity.

9 encourage physical activity

Make physical activity fun for the whole family. Involve your children in the planning. Walk, run, and play with your child—instead of sitting on the sidelines. Set an example by being physically active and using safety gear, like bike helmets.



10 be a good food role model

Try new foods yourself. Describe its taste, texture, and smell. Offer one new food at a time. Serve something your child likes along with the new food. Offer new foods at the beginning of a meal, when your child is very hungry. Avoid lecturing or forcing your child to eat.

10
consejos
Serie
de educación
en nutrición

dé buen ejemplo de salud a los niños



10 consejos para dar buenos ejemplos

Usted es la influencia más importante para sus hijos. Puede hacer muchas cosas para ayudar a sus hijos a desarrollar hábitos de alimentación sana, para toda la vida. Ofrecer una variedad de comidas ayuda a los niños a obtener los nutrientes que necesitan de cada grupo de alimentos. También tendrán mayores probabilidades de querer probar alimentos nuevos y que estos les gusten. Cuando los niños desarrollan un gusto por muchos tipos distintos de alimentos, es más fácil planificar las comidas de la familia. ¡Cocinen juntos, coman juntos, hablen y hagan que las comidas sean tiempos dedicados a la familia!

1 eduque con su ejemplo

Coma vegetales, frutas y granos integrales en las comidas o como bocadillos. Deje que su hijo vea que a usted le gusta comer vegetales frescos.

2 vayan de compra juntos

Ir de compras de comestibles puede educar a sus hijos sobre los alimentos y la nutrición. Hablen sobre de dónde provienen los vegetales, las frutas, los granos, los productos lácteos y las proteínas. Permita que sus hijos tomen decisiones saludables.



3 sea creativo en la cocina

Use moldes para galletitas para cortar los alimentos en formas divertidas y fáciles. Nombre los alimentos que sus hijos ayuden a preparar. Sirva la “ensalada de Janie” o los “camotes de Jackie” a la cena. Anime a sus hijos a inventarse bocadillos nuevos. Prepare sus propias mezclas de nueces y frutas con granos integrales secos, cereales con bajo contenido de azúcar y frutas secas.

4 ofrézcales los mismos alimentos a todos

Deje de “cocinar a la carta” al preparar varios platos distintos para complacer a los niños. Es más fácil planear las comidas familiares cuando todos comen lo mismo.



5 recompense con atención, no con comida

Demuestre su amor con abrazos y besos. Consuele con abrazos y conversaciones. No ofrezca dulces como recompensas. Eso permite que sus hijos comiencen a pensar que los postres son mejores que otros alimentos. Si no se comen la comida, los niños no necesitan “otras cosas”, como dulces o galletitas, para reemplazarla.

6 en la mesa enfóquese en la familia

Hable sobre temas divertidos y felices a la hora de comer. Apague el televisor. No conteste el teléfono. Intente hacer que la hora de comida sea un período libre de estrés.



7 preste atención a sus hijos

Si sus hijos dicen que tienen hambre, ofrézcales bocadillos pequeños y sanos, aunque no sea hora de comer. Ofrezca opciones. Pregunte “¿Qué les gustaría en la cena: brócoli o coliflor?” en lugar de decir “¿Quieren brócoli con la cena?”

8 limite el tiempo frente a una pantalla

No permita más de 2 horas al día frente a la televisión o la computadora. Levántese y muévase durante los anuncios para hacer algo de actividad física.

9 anime la actividad física

Haga que la actividad física sea divertida para toda la familia. Involucre a sus hijos en la planificación. Camine, corra y juegue con sus hijos, en lugar de sólo observar. Dé el ejemplo al estar físicamente activo y usar equipo de seguridad, como cascos de bicicleta.



10 dé el buen ejemplo de alimentación

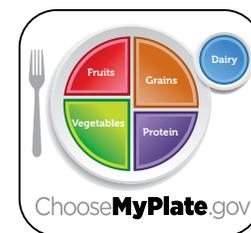
Pruebe alimentos nuevos también. Describa el sabor, la textura y el olor. Ofrezca un alimento nuevo a la vez. Sirva un alimento nuevo con algún otro que les guste a sus hijos. Ofrezca alimentos nuevos al empezar a comer, cuando sus hijos tienen mucha hambre. Evite las discusiones o el forzar a sus hijos a comer.

10 tips

Nutrition Education Series



the **School Day**
just got
Healthier
United States Department of Agriculture



Nearly 32 million children receive meals throughout the school day. These meals are based on nutrition standards from the U.S. Department of Agriculture. New nutrition standards for schools increase access to healthy food and encourage kids to make smart choices. Schools are working to make meals more nutritious, keep all students hunger-free, and help children maintain or reach a healthy weight.

1 healthier school meals for your children

Your children benefit from healthier meals that include more whole grains, fruits and vegetables, low-fat dairy products, lower sodium foods, and less saturated fat. Talk to your child about the changes in the meals served at school.

2 more fruits and vegetables every day

Kids have fruits and vegetables at school every day. A variety of vegetables are served throughout the week including red, orange, and dark-green vegetables.



3 more whole-grain foods

Half of all grains offered are whole-grain-rich foods such as whole-grain pasta, brown rice, and oatmeal. Some foods are made by replacing half the refined-grain (white) flour with whole-grain flour.



4 both low-fat milk (1%) and fat-free milk varieties are offered

Children get the same calcium and other nutrients, but with fewer calories and less saturated fat by drinking low-fat (1%) or fat-free milk. For children who can't drink milk due to allergies or lactose intolerance, schools can offer milk substitutes, such as calcium-fortified soy beverages.



5 less saturated fat and salt

A variety of foods are offered to reduce the salt and saturated fat in school meals. Main dishes may include beans, peas, nuts, tofu, or seafood as well as lean meats or poultry. Ingredients and foods contain less salt (sodium).



6 more water

Schools can provide water pitchers and cups on lunch tables, a water fountain, or a faucet that allows students to fill their own bottles or cups with drinking water. Water is available where meals are served.

7 new portion sizes

School meals meet children's calorie needs, based on their age. While some portions may be smaller, kids still get the nutrition they need to keep them growing and active.

8 stronger local wellness programs

New policies offer opportunities for parents and communities to create wellness programs that address local needs. Talk with your principal, teachers, school board, parent-teacher association, and others to create a strong wellness program in your community.

9 MyPlate can help kids make better food choices

Show children how to make healthy food choices at school by using MyPlate. Visit ChooseMyPlate.gov for tips and resources.



10 resources for parents

School meal programs can provide much of what children need for health and growth. But for many parents, buying healthy foods at home is a challenge. Learn more about healthy school meals and other nutrition assistance programs at www.fns.usda.gov.

10 consejos Serie de educación en nutrición



El Día Escolar ahora es más Saludable

United States Department of Agriculture



Cerca de 32 millones de niños reciben comidas a través del comedor escolar. Estas comidas están basadas en estándares nutricionales emitidos por el Departamento de Agricultura de los EE.UU. Los estándares nutricionales para los comedores escolares incrementan el acceso a alimentos nutritivos y animan a los niños a seleccionar comidas saludables. Los centros escolares están trabajando para hacer las comidas más nutritivas, a mantener a los estudiantes sin hambre, y ayudar a los niños a mantener o alcanzar un peso saludable.

1 comidas escolares saludables

Sus niños se benefician con comidas saludables que incluyen granos integrales, frutas y vegetales, productos lácteos bajos en grasa, alimentos bajos en sal y menos grasas saturadas. Hable con su niño(a) sobre los cambios en las comidas que se están sirviendo en los colegios.

2 más frutas y vegetales cada día

Los niños disponen de frutas y vegetales cada día. Una gran variedad de vegetales son servidos durante la semana, incluyendo verduras y otros vegetales rojos y anaranjados.



3 más granos integrales

La mitad de los cereales ofrecidos son productos integrales como por ejemplo: pasta de harina integral, arroz integral y avena. Algunos productos son hechos reemplazando la mitad de la harina refinada por harina integral.



4 leche sin grasa y baja en grasa (1%) son ofrecidos

Al tomar leche sin grasa o baja en grasa (1%), los niños adquieren la misma cantidad de calcio y otros nutrientes pero con pocas calorías y menos grasas saturadas. Para los niños que no pueden tomar leche debido a alergias o por ser intolerantes a la lactosa, los colegios pueden ofrecer sustitutos de leche como por ejemplo bebidas de soya fortificadas con calcio.



5 menos sal y menos grasas saturadas

Variedad de alimentos son ofrecidos para reducir la sal y las grasas saturadas en las comidas escolares. Las comidas principales pueden incluir frejoles, alverjitas, nueces, tofu o pescado, así como carnes magras y pollo. Los ingredientes y comidas contienen menos sal (sodio).



6 más agua

Los centros escolares pueden proveer agua en jarras y en vasos para las bandejas de almuerzo, también habrá agua disponible en fuentes o caños para permitir que los estudiantes llenen sus vasos y botellas con agua para beber. El agua estará disponible en los comedores escolares.

7 nuevos tamaños de porciones

Las comidas escolares satisfacen las necesidades calóricas de los niños de acuerdo a su edad. Mientras algunas porciones pueden ser pequeñas, éstas aún satisfacen las necesidades nutricionales de los niños para que sigan creciendo y se mantengan activos.

8 fortalecer los programas locales de salud

Las nuevas regulaciones ofrecen oportunidades para que los padres de familia y las comunidades puedan crear programas de salud y promoción social que permitan satisfacer las necesidades locales. Hable con el coordinador del centro escolar, maestros, asociación de maestros y padres de familia, y otros para crear programas de salud en su comunidad.

9 MiPlate puede ayudar a sus niños a escoger mejor sus alimentos

Muestre a los niños cómo elegir sus alimentos saludablemente en el colegio usando MiPlate. Visite ChooseMyPlate.gov para consejos y otros recursos.



10 recursos para los padres

Los programas de alimentos escolares pueden proveer mucho de lo que los niños necesitan para crecer saludables. Sin embargo para muchos padres comprar alimentos saludables es difícil. Infórmese más sobre comedores escolares saludables y otros programas de nutrición en www.fns.usda.gov.



Plant Parts

Let's look at the different parts of the plant that we eat!



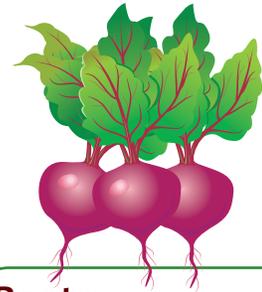
Flower:
Produces the plant's seeds



Leaves:
Make food through photosynthesis



Stem:
Moves water and other nutrients throughout the plant



Roots:
Absorb water and other nutrients from the soil



Seeds:
Unborn plants



Fruit:
Part of the plant that protects the seeds

Family Activity

The object of this game is to figure out which part of the plant these 10 foods come from. Draw a line from each food to the correct plant-part name. Will you be able to recognize these plant parts later? See if you can find all six of the plant parts at home or in the grocery store.



Stem

Flower

Fruit

Root

Leaf

Seed





Lesson 2

Nutrients We Need

OBJECTIVES

- ☺ To emphasize the similarities between humans and plants in the need for nutrients
- ☺ To learn about the six classes of nutrients and why we need all six of them
- ☺ To learn how to identify good food sources of selected nutrients
- ☺ To learn how plants provide us with nutrients
- ☺ To learn about replenishing the nutrients in soil through vermicomposting (composting with worms)

APPLICABLE CONTENT STANDARDS

- ☺ English–language arts
- ☺ Science

(See the matrix in Appendix B.)

Materials for In-class Lesson and Activities	Materials for Gardening Activity
Handouts: 2-1 Nutrient Sandwich 2-2 Nutrient Word Search “10 tips” Nutrient Sandwich overhead transparency (if desired)	Handouts: 2-3 My Friend, the Worm Materials for one worm bottle: 2-liter plastic soda bottle Moist, shredded newspaper (black and white only, no color) Shredded lettuce (Ask the cafeteria staff for left-over lettuce without dressing on it.) Half-pint of red worms (Contains approximately 50 worms, enough for five bottles. See “Background Information” for ordering information.) A 4- to 5-inch square piece of dark material, such as a cotton sheet Rubber band Black construction paper A spray bottle filled with water Tape Purchased or finished compost (for garden preparation, time permitting)



Preparation for In-class Lesson and Activities	Preparation for Gardening Activity
<p>Day before the lesson: Photocopy handouts 2-1, 2-2, and the “10 tips.” Make an overhead transparency of the nutrient sandwich (if desired). Gather materials.</p>	<p>Day before the lesson: Photocopy handout 2-3. Gather materials. Prepare 2-liter soda bottle (see step 1 under “Gardening Activity”)</p>
<p>Just before the lesson: Have students take out nutrition folders.</p>	<p>Just before the lesson: Moisten the paper for the worm bottles.</p>

Nutrition Lesson Activities

(60 min.)

1. Review of lesson 1

-  Who remembers what our bodies need in order to grow, stay healthy, learn in school, and play? *Food, water, air, exercise, and sleep* (Remember the game of charades?)
-  In addition, remember that most of our foods come from plants and animals.

2. Nutrient discussion. Distribute to each student the Nutrient Sandwich handout (2-1).

-  Food provides our bodies with many different nutrients. Does anyone know what a “nutrient” is? Has anyone seen the list of nutrients on the food labels? Nutrients are substances that our bodies need to help us do all the things that we do every day. They give our bodies energy, help us grow, and keep us healthy. There are six different classes of nutrients.
-  Our bodies need all six types of nutrients, which can be found in many different foods.
-  Now look at all six nutrients. Learn what the different classes are, what the nutrients do, how a plant gets them, and where they may be found on the “nutrient sandwich.” Go through each of the nutrients on the Nutrient Table on page 34.
 - a. Have one student read aloud from the handout (2-1) the information about one nutrient.
 - b. Mention to the students the food associated with each nutrient. Where would you find the nutrient on the nutrient sandwich? (There may be more than one food per nutrient.) Draw a line connecting the nutrient to the correct part of the sandwich. Follow along on the overhead transparency if desired.
 - c. Have the class do the activity in the last column on the handout.
 - d. Repeat for each nutrient.
-  Have students repeat the names of all six nutrients before moving on to the next section. (They make great spelling words!)





3. Plant nutrients

- We eat plants to get nutrients so we can grow and stay healthy. Why do the plants need nutrients? How do they get those nutrients?

Carbohydrates. Made in the leaves through the process of photosynthesis. Carbohydrates include the sugar that the plant makes and uses for food; they are also a source of energy for plants.

Minerals. Taken up from the soil by the roots. Plants need minerals to grow.

Protein and fat. Nutrients manufactured by plants. Plants make only what they need.

Vitamins. Made by the plant by using carbohydrates, water, minerals, and sunlight.

Water. Brought up to the plant through the roots in soil. Plants need water to maintain a relatively constant temperature and carry other nutrients.

4. Review activity

- Distribute copies of the Nutrient Word Search handout (2-2). It is a mix of a fill-in exercise and a word-search puzzle. Students must answer questions by using words from their vocabulary list. Those words can then be found in the word search.

Gardening Activity

(30 min.)

Plants get most of their nutrients from the soil. Therefore, it is important to make sure that the soil has all the nutrients it needs. When plants are growing, they are continually taking nutrients out of the soil, so we must find a way to replenish the soil in our gardens and farmlands with the necessary nutrients. We do this by adding nutrients into our soil in the form of compost or other fertilizers. For this lesson we are going to concentrate on compost. Compost is a nutrient-rich material that may be added directly to the soil. It may be purchased already prepared or made from everyday items. You can make your own compost by using a worm bottle. Worms are excellent recyclers. They turn old, decaying material into nutrient-rich material.

Let the students examine the worms by using handout 2-3. Then they create their own worm bottles to provide compost for their garden in a few weeks. Directions are as follows:

1. Prepare the 2-liter plastic soda bottle: Remove the label by using a little hot water. Sometimes peanut butter is helpful in removing the glue. Cut off the top of the bottle, making sure that the cut edges are not sharp. Poke several holes around the middle section of the bottle to provide air to the worms. Poke a few holes around the bottom of the bottle for drainage. Use a drill, a heated nail, or a soldering gun to make the holes.
2. Use a spray bottle to moisten the newspaper until it has the consistency of a damp, wrung-out sponge. Place approximately 1 to 2 inches of the moist, shredded newspaper in the bottle. Then place 1 to 2 inches of shredded lettuce on top of the newspaper. Continue alternating the layers until you reach the top of the bottle. Do not pack the layers down; worms need air to breathe. Do not make the newspaper bedding too wet.



3. Make sure the students have had a chance to examine the worms before adding them to the bottle. Add 10 to 12 red worms on top. They will work their way down into the bottle. Five worm bottles can be made from a half-pint container of red worms.
4. Wrap black construction paper around the bottle and tape the ends together to form a tube that can be slipped on and off for viewing purposes.
5. Cover the top of the bottle with dark cloth and secure it with a rubber band to prevent light and flies from entering the compost.
6. Place the worm bottle on a tray for drainage purposes.
7. Add new food every three to four days and cover with more shredded newspaper. Spray to keep moist. The newspaper will keep the worm bottle from smelling. Many other types of plant materials, such as the peels of fruits and vegetables, may be added to the bottle. Add only foods without dressings or sauces. Food should be added to the worm bottle slowly at first. If food is added faster than the worms can digest, the food will rot and begin to smell.
8. Add the compost/worm castings to the garden after a month or two. Lightly sprinkle them in the holes in which seeds are to be planted or around the new seedlings. Remember to replenish the worm bottle to keep the cycle going.
9. Consider your long-term goals. If you plan to keep your worm bottle for several months or even years, you may consider transferring the contents of your bottle to a larger bin. In addition, after a month or two, you may want to try adding other foods to your worm bottle. If the food is not eaten in a few days, remove it and try something else.

If there is enough time, take some students outside and start to prepare the soil in the garden by turning it over and adding prepared compost (available for purchase at a local nursery). The other group can work inside on the worm-bottle activity.

Additional Activities

1. Reinforce the students' knowledge of the foods that provide different nutrients. Divide the class into small groups and have them write down several foods that are good sources of a given nutrient class. Discuss each group's responses together as a class. This will give the students an opportunity to review where they will find the different nutrients. For more information on good food sources for the various nutrients, visit the Academy of Nutrition and Dietetics Web site at <http://www.eatright.org/Public> or consult resource books.
2. Focus only on fruits and vegetables, and use the Fresh Fruit and Vegetable Photo Cards (to order, look in Appendix D under "California Department of Education"). Students can group foods by nutrient content. Find five good food sources for each nutrient. Some foods may appear more than once.
3. Discuss the minerals needed by plants, including nitrogen (helps plants grow and stay green), phosphorous (helps plants develop strong roots), and potassium (helps plants grow and avoid infection). Discuss the importance of composting and worms, which replenish the soil with necessary minerals.





4. Have the class or entire school start a composting bin for leftover food items from the cafeteria.
5. Write in a journal about the gardening experience.

Background Information

Composting. Method by which plant products are recycled and return nutrients to the soil. Under slightly moist and warm conditions, plant product waste will decompose and produce a substance that is nutrient-rich. This material is known as compost and is mixed into the soil to provide growing plants the nutrients they need for optimal growth.

Nutrients. Substances that our bodies need to help us grow and stay healthy.

Red worms. Large quantities may be ordered from worm farms. Use a search engine, such as Google, and type “red worm farms” to locate a worm farm near you. For smaller quantities, check with your local nursery or master gardener.

Vermicomposting. Another convenient way of making compost by using worm bins. The process is demonstrated in the worm-bottle activity. Worms eat plant waste and change it into a nutrient-rich material that can be put back in the soil as compost.





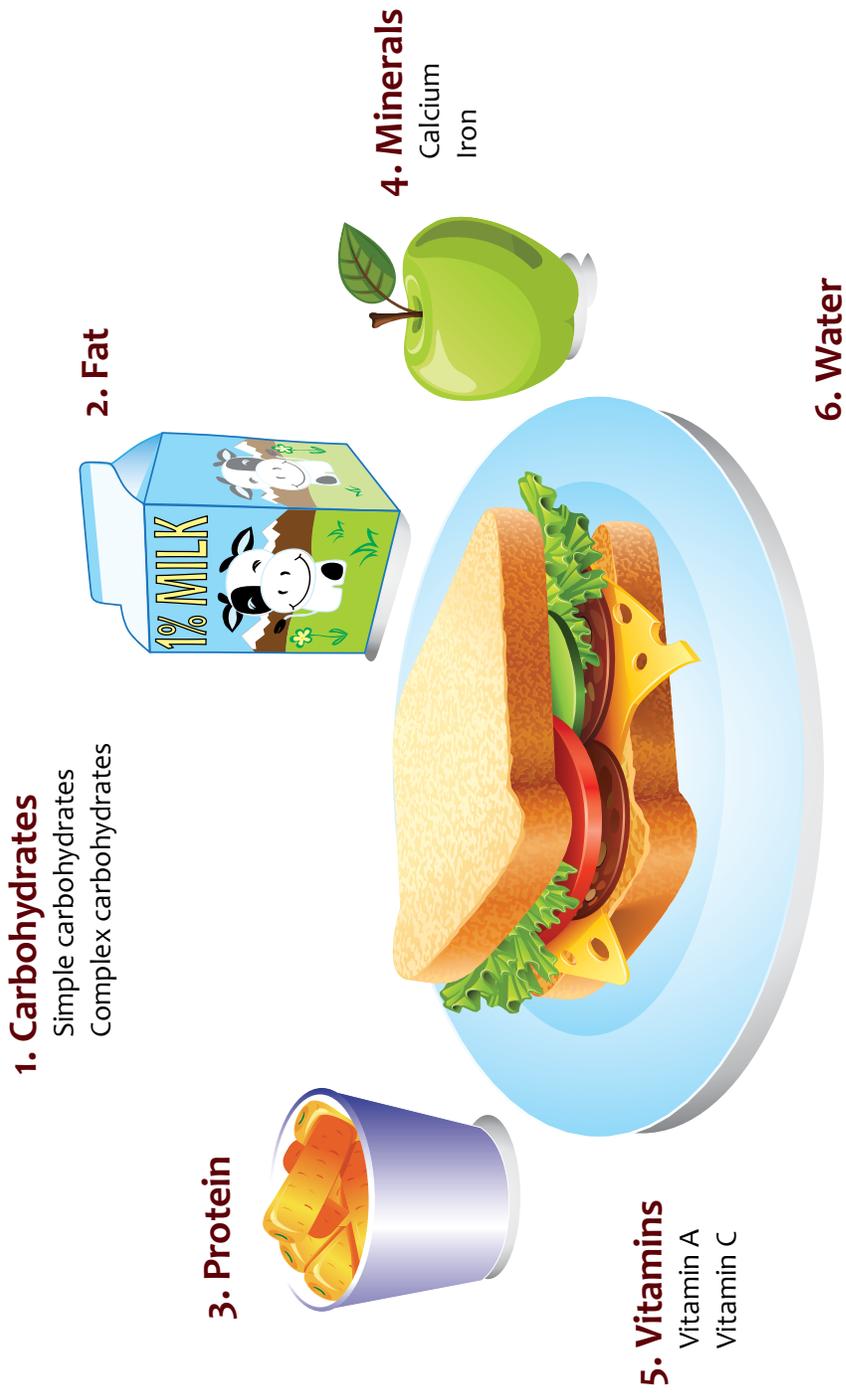
Nutrient Table

Nutrient Classes	What It Does	Where We Find It	Activity
Carbohydrates: complex and simple	<ul style="list-style-type: none"> ♥ Provide energy to the body when needed immediately. (Simple carbohydrates provide energy slightly faster than complex carbohydrates; however, they are also used up faster. Fiber is a type of complex carbohydrate that does not provide energy.) 	<ul style="list-style-type: none"> ♥ Complex carbohydrates—rice, cereal, pasta, fruits, bread ♥ Simple carbohydrates—fruits, sweets, and sodas 	<ul style="list-style-type: none"> ♥ Do 5 jumping jacks. The body uses carbohydrates to do the activity. (Have students quietly count backwards.)
Fat —some fat is needed in the diet, but in moderation	<ul style="list-style-type: none"> ♥ Is stored in the body and provides a second source of energy ♥ Protects the cells in our bodies 	<ul style="list-style-type: none"> ♥ In all animal and some plant products as well as all foods made with or cooked in butter or oil (e.g., ham, milk, cheese, nuts, french fries) 	<ul style="list-style-type: none"> ♥ If we kept doing jumping jacks for a while longer, our bodies would burn up fat.
Protein —made up of “building blocks,” called amino acids, from our diets	<ul style="list-style-type: none"> ♥ Helps to build and repair muscles (including heart) ♥ Provides a third source of energy 	<ul style="list-style-type: none"> ♥ In animal (e.g., cheese, milk, meat) and some plant products (e.g., beans, nuts, seeds) 	<ul style="list-style-type: none"> ♥ Do a desk push-up. The muscles used are made of protein. ♥ Place your hand over your chest and feel your heart muscle beating.
Minerals —12 are essential* Examples: Calcium Iron	<ul style="list-style-type: none"> ♥ Keep our bodies <i>healthy</i> and working properly. ♥ Calcium helps to build strong bones and teeth. ♥ Iron keeps blood healthy by carrying oxygen to all of the cells (they need oxygen to survive), especially the brain. 	<ul style="list-style-type: none"> ♥ Calcium—In milk products (e.g., cheese, yogurt) and some vegetables (e.g., broccoli) ♥ Iron—In meats (e.g., ham) and some green leafy vegetables 	<ul style="list-style-type: none"> ♥ Calcium: Clench teeth together. Did anyone’s teeth break? ♥ Iron: Take a deep breath. <i>Iron</i> takes oxygen from the lungs to all cells in the body.
Vitamins —13 are essential* Examples: Vitamin A Vitamin C	<ul style="list-style-type: none"> ♥ Keep our bodies <i>healthy</i> and working properly. ♥ Vitamin A helps us see. ♥ Vitamin C helps to keep us from getting sick; helps wounds heal. 	<ul style="list-style-type: none"> ♥ Mostly in fruits and vegetables but may be found in almost all foods ♥ Vitamin A—In carrots and broccoli ♥ Vitamin C—In citrus fruits and tomatoes 	<ul style="list-style-type: none"> ♥ Vitamin A: Turn off lights and look around the room. Are you still able to see a little? ♥ Vitamin C: How many people have colds?
Water	<ul style="list-style-type: none"> ♥ Regulates body <i>temperature</i> and the movement of other nutrients through the body ♥ Is needed by every cell in the body 	<ul style="list-style-type: none"> ♥ In all foods and drinks 	<ul style="list-style-type: none"> ♥ Sweating after an activity is the body’s way of cooling down. ♥ Breathe into the palm of your hand and feel moisture.

* *Essential* means that our bodies cannot make enough of it or make it at all, so we must get it from the food we eat. There are 12 essential minerals: calcium, iron, zinc, chromium, copper, fluoride, iodine, magnesium, manganese, molybdenum, phosphorous, and selenium. There are 13 essential vitamins: A, D, E, K, C, B-6, B-12, thiamin, riboflavin, niacin, folate, biotin, and pantothenic acid.

Nutrient Sandwich

Nutrients are substances in foods that our bodies need to help us grow, play, and stay healthy.



NAME:

DATE:

Handout 2-1

Nutrient Sandwich

Nutrients are substances in foods that our bodies need to help us grow, play, and stay healthy.

1. Carbohydrates

- ♥ The first source of energy for our bodies. The two types are:
 - Simple**—energy is used quickly.
 - Complex**—energy is used more slowly. Fiber does not provide energy but does help move food smoothly through our bodies.

3. Protein

- ♥ Helps to build and repair muscle
- ♥ A third source of energy for our bodies



2. Fat

- ♥ A second source of energy for our bodies
- ♥ Protects the cells in our bodies

4. Minerals

- ♥ We need 12 different minerals to help our bodies grow and stay healthy. Two minerals are:

Calcium—helps keep our bones and teeth strong

Iron—helps keep our blood healthy so it can carry oxygen throughout the body



5. Vitamins

- ♥ We need 13 different vitamins to help our bodies grow and stay healthy. Two vitamins are:

Vitamin A—helps us to see

Vitamin C—helps us stay healthy

6. Water

- ♥ Cools our body each time we sweat
- ♥ Moves the other nutrients through our blood



NAME: _____

DATE: _____

Handout 2-2

Nutrient Word Search

Directions: Using your Nutrient Sandwich, fill in the blanks in the following sentences. Then circle those words in the puzzle shown below.

1. Carbohydrates, fat, protein, vitamins, minerals, and water are the six types of _____ .
2. Calcium and iron are examples of _____ .
3. We need to eat _____ to help build and repair our muscles.
4. _____ may be either simple or complex.
5. We need to drink several glasses of _____ a day to regulate our body temperature.
6. _____ A and C are found in fruits and vegetables and help our bodies grow and stay healthy.
7. Foods have _____ in them if they are cooked with butter or oil.

W	A	T	E	R	A	W	T	C	B	J	K	S	S	U
W	K	D	P	Q	B	O	R	M	L	M	W	S	H	C
H	O	D	F	M	P	R	O	T	E	I	N	G	O	U
E	I	K	N	S	D	M	W	B	V	N	J	H	V	L
E	E	V	U	J	S	S	E	R	D	E	T	G	E	T
L	E	H	T	E	H	N	L	L	J	R	D	M	L	I
B	C	A	R	B	O	H	Y	D	R	A	T	E	S	V
A	S	F	I	S	E	D	K	S	R	L	G	D	O	S
R	A	K	E	D	W	R	J	K	M	S	Q	Z	P	E
R	U	K	N	C	O	M	P	O	S	T	M	H	K	E
O	L	M	T	M	G	W	H	F	L	S	R	O	T	D
W	T	P	S	L	V	I	T	A	M	I	N	S	L	S
E	N	B	R	U	S	H	U	T	M	V	B	E	G	Z

Here are some more words to find in the word-search puzzle to your left!

brush

compost

hoe

hose

rake

seeds

shovels

wheelbarrow

worms



Handout 2-2

Nutrient Word Search—Answer Key

Directions: Using your Nutrient Sandwich, fill in the blanks in the following sentences. Then circle those words in the puzzle shown below.

1. Carbohydrates, fat, protein, vitamins, minerals, and water are the six types of **NUTRIENTS**.
2. Calcium and iron are examples of **MINERALS**.
3. We need to eat **PROTEIN** to help build and repair our muscles.
4. **CARBOHYDRATES** may be either simple or complex.
5. We need to drink several glasses of **WATER** a day to regulate our body temperature.
6. **VITAMINS** A and C are found in fruits and vegetables and help our bodies grow and stay healthy.
7. Foods have **FAT** in them if they are cooked with butter or oil.

W	A	T	E	R	A	W	T	C	B	J	K	S	S	U
W	K	D	P	Q	B	O	R	M	L	M	W	S	H	C
H	O	D	F	M	P	R	O	T	E	I	N	G	O	U
E	I	K	N	S	D	M	W	B	V	N	J	H	V	L
E	E	V	U	J	S	S	E	R	D	E	T	G	E	T
L	E	H	T	E	H	N	L	L	J	R	D	M	L	I
B	C	A	R	B	O	H	Y	D	R	A	T	E	S	V
A	S	F	I	S	E	D	K	S	R	L	G	D	O	S
R	A	K	E	D	W	R	J	K	M	S	Q	Z	P	E
R	U	K	N	C	O	M	P	O	S	T	M	H	K	E
O	L	M	T	M	G	W	H	F	L	S	R	O	T	D
W	T	P	S	L	V	I	T	A	M	I	N	S	L	S
E	N	B	R	U	S	H	U	T	M	V	B	E	G	Z

Here are some more words to find in the word-search puzzle to your left!

brush

compost

hoe

hose

rake

seeds

shovels

wheelbarrow

worms



NAME: _____

DATE: _____

Handout 2-3

My Friend, the Worm

Draw a picture of your worm in the space provided below.

Observing the Worm Bottle

During the next month, you are going to have to keep an extra special eye on your worm bottle. Make sure that your worms have enough food and water, but not too much. Starting today, write down what you see in your worm bottle. Check your worm bottle every week and write down any changes you see. (Use another sheet of paper if you need it.)

Date: _____

Date: _____

Date: _____

Date: _____

liven up your meals with vegetables and fruits



10 tips to improve your meals with vegetables and fruits

Discover the many benefits of adding vegetables and fruits to your meals. They are low in fat and calories, while providing fiber and other key nutrients. Most Americans should eat more than 3 cups—and for some, up to 6 cups—of vegetables and fruits each day. Vegetables and fruits don't just add nutrition to meals. They can also add color, flavor, and texture. Explore these creative ways to bring healthy foods to your table.

1 fire up the grill
Use the grill to cook vegetables and fruits. Try grilling mushrooms, carrots, peppers, or potatoes on a kabob skewer. Brush with oil to keep them from drying out. Grilled fruits like peaches, pineapple, or mangos add great flavor to a cookout.

2 expand the flavor of your casseroles
Mix vegetables such as sauteed onions, peas, pinto beans, or tomatoes into your favorite dish for that extra flavor.



3 planning something Italian?
Add extra vegetables to your pasta dish. Slip some peppers, spinach, red beans, onions, or cherry tomatoes into your traditional tomato sauce. Vegetables provide texture and low-calorie bulk that satisfies.

4 get creative with your salad
Toss in shredded carrots, strawberries, spinach, watercress, orange segments, or sweet peas for a flavorful, fun salad.

5 salad bars aren't just for salads
Try eating sliced fruit from the salad bar as your dessert when dining out. This will help you avoid any baked desserts that are high in calories.

6 get in on the stir-frying fun
Try something new! Stir-fry your veggies—like broccoli, carrots, sugar snap peas, mushrooms, or green beans—for a quick-and-easy addition to any meal.

7 add them to your sandwiches
Whether it is a sandwich or wrap, vegetables make great additions to both. Try sliced tomatoes, romaine lettuce, or avocado on your everyday sandwich or wrap for extra flavor.



8 be creative with your baked goods
Add apples, bananas, blueberries, or pears to your favorite muffin recipe for a treat.

9 make a tasty fruit smoothie
For dessert, blend strawberries, blueberries, or raspberries with frozen bananas and 100% fruit juice for a delicious frozen fruit smoothie.



10 liven up an omelet
Boost the color and flavor of your morning omelet with vegetables. Simply chop, saute, and add them to the egg as it cooks. Try combining different vegetables, such as mushrooms, spinach, onions, or bell peppers.

Avive sus comidas con vegetales y frutas



10 consejos para mejorar sus comidas con vegetales y frutas

Descubra los muchos beneficios de agregar vegetales y frutas a sus comidas. Son bajos en contenido de grasas y calorías, también son buenas fuentes de fibra y otros nutrientes. A la mayoría de los estadounidenses les conviene comer más de 3 tazas y a algunos hasta 6 tazas de vegetales y frutas todos los días. Los vegetales y las frutas no sólo agregan valor nutritivo a las comidas; también les agregan color, sabor y textura. Explore las siguientes maneras de llevar alimentos sanos a la mesa.

1 encienda la parrilla
Use la parrilla para cocer vegetales y frutas. Pruebe brochetas de setas o champiñones, zanahorias, pimientos o papas a la parrilla. Úntelos aceite para que no se resequen. Las frutas a la parrilla, como melocotones, piña o mangos, agregan mucho sabor a las parrilladas.

2 amplíe el sabor de sus cazuelas
Mezcle vegetales como cebollas salteadas, guisantes, frijoles pintos o tomates en su plato favorito para agregarle sabor.



3 ¿tiene planeada una comida italiana?
Agregue cantidades adicionales de vegetales a sus platos de fideos o tallarines. Agregue pimientos, espinaca, frijoles rojos, cebolla o tomates cereza a su salsa de tomate tradicional. Los vegetales agregan textura y cuerpo que satisfacen y son bajos en calorías.

4 sea creativo con sus ensaladas
Mezcle zanahorias ralladas, fresas, espinaca, berro, trozos de naranja o guisantes para crear una ensalada sabrosa y colorida.

5 La sección de alimentos preparados no sólo tiene ensaladas de vegetales
Al salir a cenar, pruebe comer frutas picadas como postre. Eso le ayudará a evitar los postres horneados con alto contenido de calorías.

6 diviértase salteando los vegetales
¡Pruebe algo nuevo! Saltee los vegetales, como brocoli, zanahorias, guisantes dulces, setas o champiñones, o habichuelas tiernas, para agregarlas fácilmente a cualquier comida.

7 agréguelas a sus sándwiches
Ya se trate de un sándwich o una tortilla de harina enrollada, los vegetales van muy bien con ambos. Pruebe rebanadas de tomate, lechuga romana o aguacate en su sándwich o tortilla de harina enrollada de todos los días para agregar sabor.



8 sea creativo con los productos horneados
Para un gusto adicional, agregue manzanas, plátanos, bayas o peras a su receta de mollete o kekito favorito.

9 prepare un rico batido de frutas
Como postre, mezcle fresas, arándanos o frambuesas con plátano congelado y 100% jugo de fruta para preparar un delicioso batido de frutas.



10 avive las tortillas de huevo
Mejore el color y el sabor de la tortilla de huevo mañanera agregándole vegetales. Sencillamente córtelos, saltéelos y agréguelos a los huevos mientras los cocen. Pruebe combinaciones distintas de vegetales, como setas o champiñones, espinaca, cebolla o pimientos dulces.

kid-friendly veggies and fruits



10 tips for making healthy foods more fun for children

Encourage children to eat vegetables and fruits by making it fun. Provide healthy ingredients and let kids help with preparation, based on their age and skills. Kids may try foods they avoided in the past if they helped make them.

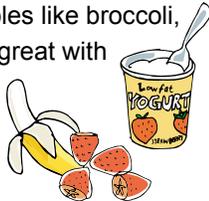
1 smoothie creations

Blend fat-free or low-fat yogurt or milk with fruit pieces and crushed ice. Use fresh, frozen, canned, and even overripe fruits. Try bananas, berries, peaches, and/or pineapple. If you freeze the fruit first, you can even skip the ice!



2 delicious dippers

Kids love to dip their foods. Whip up a quick dip for veggies with yogurt and seasonings such as herbs or garlic. Serve with raw vegetables like broccoli, carrots, or cauliflower. Fruit chunks go great with a yogurt and cinnamon or vanilla dip.



3 caterpillar kabobs

Assemble chunks of melon, apple, orange, and pear on skewers for a fruity kabob. For a raw veggie version, use vegetables like zucchini, cucumber, squash, sweet peppers, or tomatoes.

4 personalized pizzas

Set up a pizza-making station in the kitchen. Use whole-wheat English muffins, bagels, or pita bread as the crust. Have tomato sauce, low-fat cheese, and cut-up vegetables or fruits for toppings. Let kids choose their own favorites. Then pop the pizzas into the oven to warm.

5 fruity peanut butterfly

Start with carrot sticks or celery for the body. Attach wings made of thinly sliced apples with peanut butter and decorate with halved grapes or dried fruit.

6 frosty fruits

Frozen treats are bound to be popular in the warm months. Just put fresh fruits such as melon chunks in the freezer (rinse first). Make “popsicles” by inserting sticks into peeled bananas and freezing.

7 bugs on a log

Use celery, cucumber, or carrot sticks as the log and add peanut butter. Top with dried fruit such as raisins, cranberries, or cherries, depending on what bugs you want!

8 homemade trail mix

Skip the pre-made trail mix and make your own. Use your favorite nuts and dried fruits, such as unsalted peanuts, cashews, walnuts, or sunflower seeds mixed with dried apples, pineapple, cherries, apricots, or raisins. Add whole-grain cereals to the mix, too.



9 potato person

Decorate half a baked potato. Use sliced cherry tomatoes, peas, and low-fat cheese on the potato to make a funny face.

10 put kids in charge

Ask your child to name new veggie or fruit creations. Let them arrange raw veggies or fruits into a fun shape or design.



vegetales y frutas para niños



10 consejos para que los alimentos sanos sean más divertidos para los niños

Para animar a los niños a comer vegetales y frutas, hágales divertidas. Provea ingredientes sanos y permita que los niños ayuden en su preparación según sus edades y destrezas. Los niños tal vez deseen probar comidas que en el pasado han rechazado si ayudaron a prepararlas.

1 creaciones de batidos

Mezcle yogur o leche descremados o bajos en grasa con trozos de fruta y hielo triturado. Use frutas frescas, congeladas, enlatadas o maduras. Pruebe plátanos, arándanos, melocotones y piña. ¡Si congela las frutas de antemano, no es necesario añadir hielo!



2 aderezos deliciosos

A los niños les gusta sumergir alimentos en aderezos. Prepare un aderezo rápido para los vegetales a base de yogur y condimentos como hierbas o ajo. Sírvalo con vegetales crudos como brócoli, zanahorias o coliflor. Los trozos de fruta combinan muy bien con un aderezo de yogur y canela o vainilla.



3 “orugas” comestibles

Prepare brochetas con trozos de melón, manzana, naranja y pera. Para la versión con vegetales, use productos como pepinos, calabacín, pimientos o tomates.

4 pizzas personalizadas

Convierta su cocina en una pizzería. Use panecillos ingleses de trigo integral, roscas de pan o pan pita como base. Agregue salsa de tomate, queso bajo en grasa y vegetales o frutas en trozos. Permita que los niños elijan sus favoritos. Luego, ponga las pizzas en el horno para calentarlas.

5 “mariposas” de mantequilla de cacahuete (maní) con fruta

Comience con palillos de zanahoria o apio para el cuerpo. Use mantequilla de maní para adherir alas, hechas de rebanadas finas de manzana y decórelas con uvas o frutas secas.

6 frutas congeladas

Los bocadillos congelados seguramente serán muy populares durante los meses cálidos del verano. Sencillamente coloque frutas frescas, como trozos de melón, en el congelador (enjuáguelos primero). Haga “paletas” congelando bananas sin cáscara con palillos.

7 “insectos sobre un tronco”

Use palillos de apio, pepino o zanahoria como troncos y úntelos con mantequilla de cacahuete (maní). Ponga frutas secas como pasas, arándanos o cerezas sobre el tronco, dependiendo de qué insecto desee.

8 Mezcla de nueces y frutas secas hecha en casa

Prepárela usted mismo. Use las nueces y frutas secas que prefiera, como cacahuete (maní) sin sal, castañas, nueces o semillas de girasol y mézclelas con trozos de manzana, piña, cerezas, albaricoques o pasas secas. Agregue cereal de granos integrales también.



9 “cara de papa”

Decore media papa horneada. Coloque rebanadas de tomates cereza, guisantes y queso bajo en grasa sobre la papa para crear una cara cómica.

10 deje que los niños estén a cargo

Pídales a sus hijos que nombren las nuevas creaciones de vegetales o frutas. Permítales arreglar las vegetales o frutas crudas para crear formas o diseños divertidos.



DG TipSheet No. 11
Septiembre 2011

EL USDA es un proveedor y empleador que ofrece
igualdad de oportunidades para todos.



Family Activities

Scramble Game

How about scrambled nutrients for breakfast! What are the six different nutrients in our diet? Unscramble the following words to find out!

Example:

NEARLISM → MINERALS

Now, it's your turn . . .

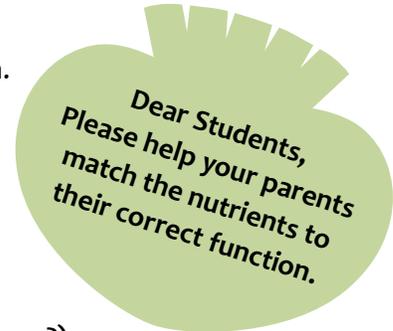
1. THEARDCABSORY → _____
2. TFA → _____
3. TIEPORN → _____
4. TINAVIMS → _____
5. ETWRA → _____

The answers are on this page below!

Matching Game

Instructions: Draw a line from each nutrient to its correct function.

- | | |
|------------------|---|
| 1. Carbohydrates | a. Provides a third source of energy and helps to build and repair muscles. |
| 2. Fat | b. One of these helps you to see at night. (Do you know which one?) |
| 3. Protein | c. One of these helps you to build stronger bones and teeth. (Do you know which one?) |
| 4. Vitamins | d. Provides a second source of energy and protects our cells. |
| 5. Minerals | e. Regulates body temperature and moves nutrients through the body. |
| 6. Water | f. Provide the first source of energy that is quickly used by the body. |



Lesson 3

MyPlate

OBJECTIVES

- ☺ To identify the food groups that make up MyPlate
- ☺ To learn the major nutrients in each food group
- ☺ To understand the important concepts of MyPlate
- ☺ To classify single and combination foods into the appropriate food group(s) on MyPlate
- ☺ To prepare a garden bed, plant seeds, and transplant seedlings
- ☺ To make plant growth charts

APPLICABLE CONTENT STANDARDS

- ☺ English–language arts
- ☺ Mathematics
- ☺ Science

(See the matrix in Appendix B.)

Materials for In-class Lesson and Activities	Materials for Gardening Activity
<p>Handouts:</p> <ul style="list-style-type: none">3-1 MyPlate3-2 Match the Food Groups“10 tips” <p>MyPlate poster—Order through the USDA. Schools may obtain full-color MyPlate resources free of charge. To request classroom materials and posters, go to USDA’s MyPlate Web site (http://www.chooseMyPlate.gov) and click on the “Printable Materials and Ordering” tab; then click on the “Online Ordering” option. The MyPlate order form can also be accessed at http://www.choosemyplate.gov/print-materials-ordering/graphic-resources.html.</p> <p>Food pictures—five pictures per food group</p> <p>Masking tape</p>	<p>Handouts:</p> <p>Purchased or finished compost (needed if garden beds were not prepared in Lesson 2). Check with a master gardener in your county or a local nursery to determine the proper type and amount of compost for your garden.</p> <p>Gardening tools (the number of each will depend on the size of the group):</p> <ul style="list-style-type: none">ShovelDigging forkRakeTrowel <p>Seeds (See “Planting Seeds” on page 50.)</p> <p>Starter plants (See “Planting Seeds” on page 50.)</p> <p>Butcher paper</p> <p>Ruler</p> <p>Markers</p>



Preparation for In-class Lesson and Activities	Preparation for Gardening Activity
<p>Day before the lesson: Photocopy handouts 3-1, 3-2, and the “10 tips.” Gather the materials.</p> <p>Prepare five stacks of food group pictures (each stack will have one picture from each of the five food groups; seed packets may be substituted for picture cards).</p> <p>Remove the black edges around the food group stickers (otherwise they will be scattered all over the desks).</p>	<p>Day before the lesson: Ask parents to volunteer for this activity.</p> <p>Week before the lesson: Decide where the garden bed will be located. Make sure the bed receives at least six to eight hours of sunlight.</p> <p>Check the soil moisture. Water thoroughly if the ground is dry.</p> <p>Day before the lesson: Gather the materials.</p> <p>Lightly water the surface of the garden bed one to two days before digging.</p> <p>Check the weather report.</p>
<p>Just before the lesson: Tape the large MyPlate poster onto the wall.</p> <p>Draw a blank MyPlate on poster paper and tape it onto the wall. Have the students take out the nutrition folders.</p>	

Nutrition Lesson Activities

(60 min.)

1. Review of Lesson 2

-  Who remembers what nutrients are?
Substances that our bodies need to help us grow and stay healthy
-  Who can name the six different 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 nutrients?
We get them from a variety of foods that come from plants and animals.

2. Introduction to MyPlate

(Refer to the MyPlate poster.)

-  We now know that we must eat a variety of different foods to get all the nutrients that our bodies need to grow and stay healthy. How do we know *which* foods and *how much* of them we need to eat?



☛ Fortunately, we have a tool called MyPlate to help us figure out the types and quantities of food to eat. Has anyone ever seen this image before (point to MyPlate)? Where?

☛ MyPlate background

💧 The United States Department of Agriculture (USDA) developed MyPlate to help you make healthful food choices.

💧 MyPlate classifies foods into food groups according to the nutrients they contain:

Vegetables
Fruits
Grains
Dairy
Protein Foods

💧 All food groups are important. We need to eat from all of them every day to stay healthy.

☛ Discuss the important concepts to learn from MyPlate: Enjoy Your Food But Eat Less, Choose Foods to Eat More Often, Make Half Your Plate Fruits and Vegetables, and Make Half Your Grains Whole Grains.

Enjoy Your Food, But Eat Less. Take time to fully enjoy your food as you eat it. Eating too fast or when your attention is focused on something else may lead to eating too much. Avoid oversized portions. Use a smaller plate, bowl, and glass. When you eat out, choose a smaller-size option.

Choose Foods to Eat More Often. Eat more vegetables, fruits, whole grains, and fat-free or low-fat (1%) milk and dairy products. These foods have the nutrients necessary for health.

Drink water instead of sugary drinks.

Make Half Your Plate Fruits and Vegetables. Choose red, orange, and dark-green vegetables such as tomatoes, sweet potatoes, and broccoli, along with other vegetables for your meals. Add fruit to meals or choose it for snacks.

Make Half Your Grains Whole Grains. To eat more whole grains, use whole-wheat bread instead of white bread or brown rice instead of white rice.

3. Food Group Classification and MyPlate Location Activity

☛ Setup:

Divide the class into five groups.

Distribute the blank MyPlate handout (3-1) to each student. Distribute a stack of food pictures, with one picture per food group, to each group of students.

☛ Examine each food group one at a time by following the procedures noted below:

Using the MyPlate handout (3-1) and the poster, discuss with the class which foods belong in each group and why.



Classification and location procedures:

1. Read the name of the food group and the description of the foods in that group. (Start with vegetables, using the information that follows item 5 in this section.)
2. Tell the students which major nutrients the vegetable group provides. (That is, why is the vegetable group important?) Write key words on the board or an overhead transparency. This step will aid the students in completing the Match the Food Groups handout (3-2). Direct the students to write the key words in the vegetable group section of handout 3-1.
3. Ask the student groups to look at their food pictures and, as a group, to identify the food item that belongs in the vegetable group. (Each student group should have only one food picture from each food group.) After each group has found the food item for the vegetable group, ask one student to hold the card up and tell the class which food item is shown. (Point out those foods that are planted in the garden or could be grown there.)
4. Direct some of the students to tape the food pictures in the correct location on the blank MyPlate taped on the wall. The other students may brainstorm about other foods in the vegetable group and draw them on handout 3-1.
5. Repeat the procedure with the other food groups: fruits, grains, dairy, and protein foods.

Vegetables—Add More to Your Day.

- ◆ All the different parts of the plant, such as the root, stem, leaves, fruit, flowers, and seeds, can be considered vegetables if they are not sweet. (A tomato, for example, is botanically a fruit, but because it is not sweet, we classify it as a vegetable when we are talking in culinary terms.)
- ◆ Vegetables have vitamins, minerals, and fiber that our bodies need to keep us healthy, growing, and strong.
- ◆ Orange or dark green vegetables are rich in vitamin A.
- ◆ Each vegetable has different nutrients that are important for keeping us healthy. To get all of them, we need to eat a variety of vegetables.
- ◆ Examples of foods in this group are carrots, spinach, and broccoli. (Which plant parts are they?) What vegetables can you name?

Fruits—Focus on Fruits.

- ◆ Fruits are plant parts that contain seeds and are usually sweet.
- ◆ This group provides the vitamins, minerals, and fiber that our bodies need to keep us healthy, growing, and strong.
- ◆ Some fruit, such as oranges, kiwi, and mango, is rich in vitamin C.
- ◆ Fruit is a great choice for a healthful snack.
- ◆ Examples of foods in this group are apples, bananas, mangoes, orange juice, and raisins. What other fruits can you name?



Grains—Make Half Your Grains Whole.

- 💧 This group includes all foods made from any type of grain product (e.g., wheat, rice, oats, rye, cornmeal).
- 💧 Examples of foods in this group are bread, cereal, rice, pasta, tortillas, and crackers.
- 💧 Grains are a good source of complex carbohydrates. Some complex carbohydrates provide us with energy while others, known as fiber, help to keep the digestive tract running smoothly.
- 💧 Whole grains are higher in fiber and some nutrients than are other grains. Popcorn is an example of a whole grain.
- 💧 Look for whole wheat or other whole grains on the ingredient labels.

Dairy—Got Your Dairy Today?

- 💧 Milk and milk products are sources of calcium, which our bodies need to keep our teeth and bones strong.
- 💧 Try to choose milk products that are lower in fat, such as low-fat or fat-free milk, yogurt, or cheese.
- 💧 Examples of foods in this group are milk, yogurt, and cheese.
- 💧 If you are lactose-intolerant, try lactose-free milk or fortified soy milk.

Protein Foods—With Protein Foods, Variety Is Key.

- 💧 Both plant and animal products are in the Protein Foods group.
- 💧 This group provides our body with protein that muscles and bones need to grow and stay healthy.
- 💧 Choose lean meat such as turkey or chicken.
- 💧 Examples of foods in this group are meat, fish, poultry, eggs, beans, nuts, and seeds.
- 💧 Try to make seafood a part of your plate twice a week.

What is missing?

Oils are not a food group, but they should be eaten every day in moderation. Foods with healthful oils provide nutrients that help to keep the heart healthy. Examples of foods with healthful oils are nuts, olives, avocados, and canola oil.

Fats and sweets such as candy, soda, butter, margarine, dressings, and gravy are not included. These foods should be eaten in moderation to make more room for foods that are high in important nutrients.

Physical Activity

Kids need 60 or more minutes of physical activity per day for a healthy heart and body. Does the class think that most kids get this amount? Why? Why not? How could the students increase their physical activity?



4. Closing Comments

- Review all the foods in each food group.
- Discuss combination foods that fit into more than one category. How many food groups would pizza or sandwiches fit into? (Consider the individual ingredients of the food.)

5. Review Activity

- Have students complete the Match the Food Groups handout (3-2). The objective is to reinforce what each food group provides for our body and some of the characteristics of the foods in that group. Students use food group stickers for handout 3-2 or have them draw their favorite foods in the boxes to the right of the food group names.

Gardening Activity

(30 min.)

Before planting the seeds, consider working with the class to decide the layout of the garden.

Divide the class into two groups to make them more manageable. Assign a parent volunteer(s) to assist one group. Have half of the class plant seeds in the garden while the other half works in the classroom on the plant growth charts. While working with the seeds, the students can try to classify them into the appropriate food group on MyPlate.

Planting Seeds

- If the soil was not prepared in Lesson 2, do it now. Digging forks or shovels can be used to turn over the soil. This process breaks up the soil and allows more space for root growth.
- Add the compost to the soil. Mix and level the surface with a rake. Do not pack the soil tightly.
- Plant the seeds according to the directions on the packet.

Make sure to plant seeds that are likely to grow under the conditions of your area and during the time of year when they are planted. Remember to consider the time until harvest. You may want to purchase some transplants to put directly into your garden. Check with a local master gardener or nursery to learn more details about gardening in your area.

- This may also be a good time to plant some of the seedlings you started in the mini-greenhouses. If the plants are still too small for transplanting, plan to do so a couple of weeks later. Generally, you should allow four to six weeks between planting seeds and transplanting. One good way to check is to gently remove a transplant from the tray. If the roots are in a clump, your plant is ready to go into the garden.
- Consider the type of snacks you may wish to make from the fruits and vegetables in your garden. See lesson 9 for snack recipes and ingredients. You may also want to plant a theme garden (e.g., a salad garden, a pizza garden, or a MyPlate garden).





- Make sure plants receive adequate water and sunlight. Too little water or too much sun may cause the seedlings to dehydrate. With too much water or not enough sun, the seedlings may grow slowly or die.
- Have the students walk around the garden plots, not through them, to avoid trampling young plants.

Plant Growth Charts

- A garden must be checked regularly, especially to ensure adequate watering. Make a point to have the class routinely check the garden. This activity can be as simple as walking by the garden on the way back to the class from recess or as intensive as designating a half hour to be spent in the garden every day. Determine what works best with your class.
- Design a chart, or several charts, for the class to keep track of the seedlings or transplants. Have the students create a graph showing the height of different plants at a specified time interval (e.g., each week). Ask the students to make predictions about which plant will grow faster, taller, and so on. You may also make additional charts to track such information as the amount of rainfall each week. Be creative!
- After several weeks have the students make comparisons between the actual plant and their predictions.

Additional Activities

- Have students design and prepare a small snack that includes one food from each of the five food groups.
- Before the lesson, have the students write down their favorite meal. After the students have learned about MyPlate, have them compare their meal to the MyPlate recommendations. Encourage students to substitute other favorite foods so that the meal more closely fits with the goals of MyPlate.
- Have the students examine the school lunch menu every morning and determine where items would fit into MyPlate.
- Cut out pictures of foods from magazines and paste them onto a blank MyPlate. Display the finished product in the classroom.

Background Information

(Recommended quantities of foods will be discussed in detail in Lesson 4.)

Vegetables. This group provides a lot of vitamins, minerals, fiber, and other substances important for good health. It is very important to include a variety of vegetables in your diet. The recommended daily amount is 2 1/2 cups, with at least some being a green vegetable and some being an orange vegetable, both of which are high in vitamin A. Some vegetables may be served with a lot of fat (e.g., french fries). Try to eat fresh vegetables without additional fat.



Fruits. This group also provides many nutrients, including vitamins and minerals. Citrus fruits (e.g., oranges, lemons) provide high levels of vitamin C that help us to stay healthy. Children should consume 1 1/2 cups of fruit each day. Most servings should be from whole fruit, not juice. If juice is consumed, it should be 100 percent fruit juice. Be aware that some “fruit” products, especially juices, are not much more than sugar with a fruit flavor; therefore, you need to check the labels (see Lesson 5 for more information).

Grains. We need to consume the most amount of food from this group—6 ounces per day. This group includes foods like bread, pasta, rice, popcorn, and oatmeal. The grains group provides a variety of nutrients, including vitamins and minerals (especially in whole and enriched grain products), some protein, and many carbohydrates. Depending on the method of preparation, the grains group may add a little or a lot of fat to our diets. Whole-grain products are also a good source of fiber. Fiber is a complex carbohydrate that is important in cleaning out the digestive tract.

Two common types of grains are whole and refined. Whole grains generally still contain all their naturally present nutrients; whereas, refined grains generally lose many important nutrients during processing. The nutrients lost include iron, several B vitamins (niacin, riboflavin, thiamin), and fiber. By law refined grains must be enriched with several of the nutrients that were lost, and they must be fortified with the vitamin folic acid. (To *enrich* means to restore something that was lost during the processing of a product. To *fortify* means to add something to a product.) However, these refined products still lack the fiber that was initially present. Therefore, whole grains are a part of a healthful diet.

Protein foods. This group provides protein and other vitamins and minerals. The primary mineral is iron, which helps to transport oxygen in our blood. The recommended amount to consume is 5 ounces per day. Leaner meats, such as turkey, chicken, and fish, should be eaten more often than fattier red meats. Plant products high in protein include beans, peas, nuts, and seeds. Those types of plant foods should be eaten a couple of times per week. Eggs are also in this food group.

Dairy. This group provides nutrients in all six classes (carbohydrates, protein, fat, vitamins, minerals, and water). Most important, this group contributes calcium, which is necessary to keep teeth and bones strong and healthy. Pasteurized milk is fortified with vitamin D, which helps the body to absorb the calcium. Growing children need to consume three cups per day because they are undergoing peak bone formation.

Oils. Although not represented on MyPlate, oils are an important source of essential fatty acids and vitamin E in the diet. They differ from other less healthful fats because they are liquid, rather than solid, at room temperature. Sources of healthy fats include avocados, olives, canola oil, and nuts, but because of their high calorie content, these foods should be eaten in moderation.

Vegetarians. People who have chosen for personal, religious, or health reasons (or all of these) to eliminate some or all animal products from their diets are considered vegetarians. There are several types of vegetarians. A vegan has eliminated all animal products, including milk, eggs, and anything made with animal fat. Ovo-vegetarians will eat eggs. Lacto-vegetarians will eat dairy products. Lacto-ovo-vegetarians will eat both eggs and milk products.

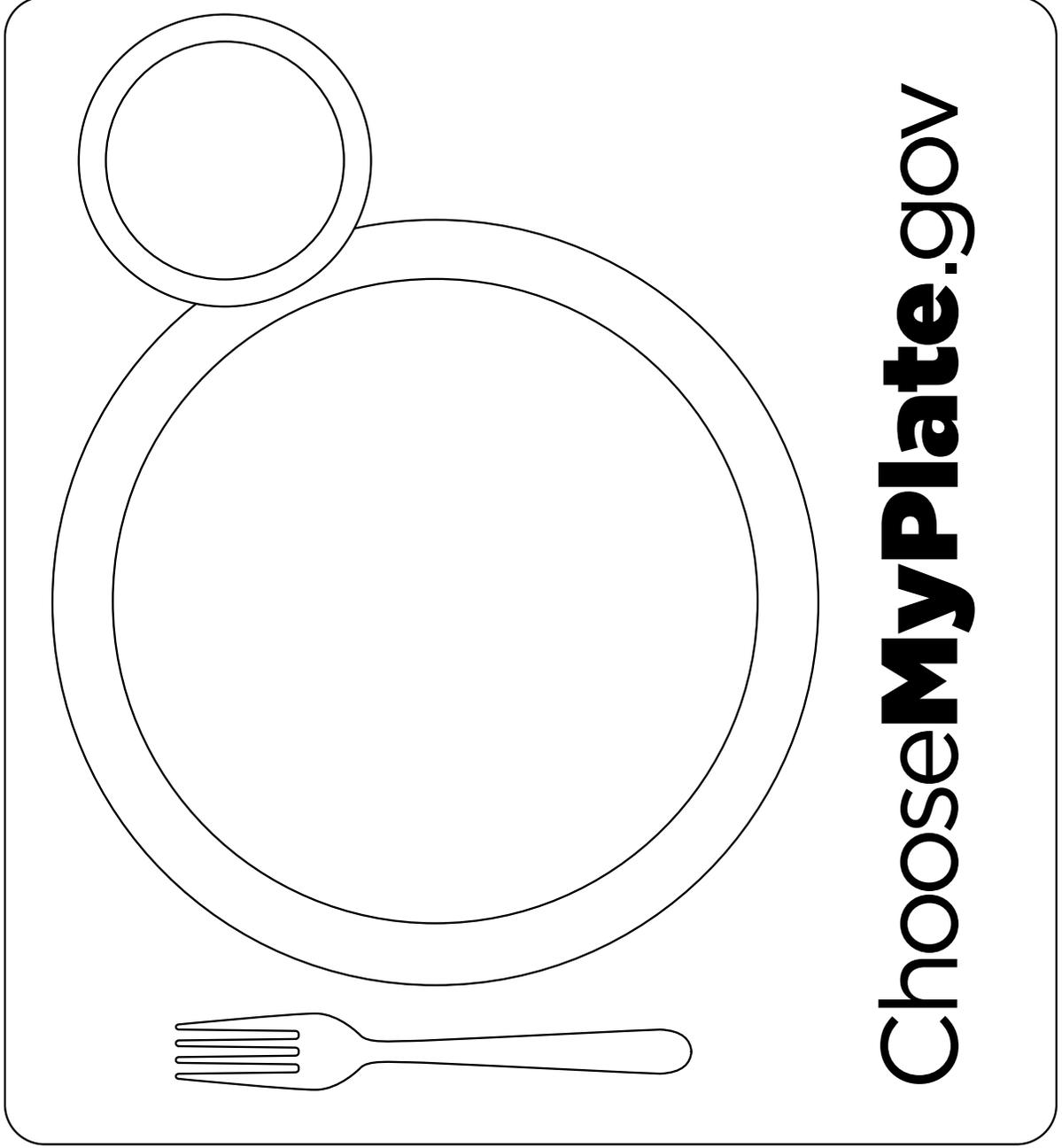
Note: For more information, visit <http://www.choosemyplate.gov>.



NAME:

DATE:

Handout 3-1
MyPlate



ChooseMyPlate.gov



NAME: _____

DATE: _____

Handout 3-2

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.

Food Group	Picture of Foods from Each Food Group
Vegetables	
Fruits	
Grains	
Dairy	
Protein foods	

What the Food Group Gives to Our Bodies
<p>Foods from this group can include all the plant parts. They provide many nutrients and fiber. Orange or dark-green ones are rich in vitamin A.</p>
<p>Foods from this group provide our bodies with fiber and energy from complex carbohydrates. We need carbohydrates to do all the things we do every day.</p>
<p>Foods from this group provide our bodies with the protein that our muscles need to grow and stay strong.</p>
<p>Foods from this group contain seeds. They provide many nutrients and fiber. Many are rich in vitamin C.</p>
<p>Foods from this group provide our bodies with the calcium that our teeth and bones need to grow and stay strong.</p>



Handout 3-2

Match the Food Groups—Answer Key

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

Food Group	Picture of Foods from Each Food Group	What the Food Group Gives to Our Bodies
Vegetables		Foods from this group can include all the plant parts. They provide many nutrients and fiber. Orange or dark-green ones are rich in vitamin A.
Fruits		Foods from this group provide our bodies with fiber and energy from complex carbohydrates. We need carbohydrates to do all the things we do every day.
Grains		Foods from this group provide our bodies with the protein that our muscles need to grow and stay strong.
Dairy		Foods from this group contain seeds. They provide many nutrients and fiber. Many are rich in vitamin C.
Protein foods		Foods from this group provide our bodies with the calcium that our teeth and bones need to grow and stay strong.

10 tips

Nutrition Education Series

choose MyPlate

10 tips to a great plate



Making food choices for a healthy lifestyle can be as simple as using these 10 Tips.

Use the ideas in this list to *balance your calories*, to choose foods to *eat more often*, and to cut back on foods to *eat less often*.

1 balance calories

Find out how many calories YOU need for a day as a first step in managing your weight. Go to www.ChooseMyPlate.gov to find your calorie level. Being physically active also helps you balance calories.

2 enjoy your food, but eat less

Take the time to fully enjoy your food as you eat it. Eating too fast or when your attention is elsewhere may lead to eating too many calories. Pay attention to hunger and fullness cues before, during, and after meals. Use them to recognize when to eat and when you've had enough.



3 avoid oversized portions

Use a smaller plate, bowl, and glass. Portion out foods before you eat. When eating out, choose a smaller size option, share a dish, or take home part of your meal.

4 foods to eat more often

Eat more vegetables, fruits, whole grains, and fat-free or 1% milk and dairy products. These foods have the nutrients you need for health—including potassium, calcium, vitamin D, and fiber. Make them the basis for meals and snacks.



5 make half your plate fruits and vegetables

Choose red, orange, and dark-green vegetables like tomatoes, sweet potatoes, and broccoli, along with other vegetables for your meals. Add fruit to meals as part of main or side dishes or as dessert.

6 switch to fat-free or low-fat (1%) milk

They have the same amount of calcium and other essential nutrients as whole milk, but fewer calories and less saturated fat.



7 make half your grains whole grains

To eat more whole grains, substitute a whole-grain product for a refined product—such as eating whole-wheat bread instead of white bread or brown rice instead of white rice.

8 foods to eat less often

Cut back on foods high in solid fats, added sugars, and salt. They include cakes, cookies, ice cream, candies, sweetened drinks, pizza, and fatty meats like ribs, sausages, bacon, and hot dogs. Use these foods as occasional treats, not everyday foods.

9 compare sodium in foods

Use the Nutrition Facts label to choose lower sodium versions of foods like soup, bread, and frozen meals. Select canned foods labeled "low sodium," "reduced sodium," or "no salt added."



10 drink water instead of sugary drinks

Cut calories by drinking water or unsweetened beverages. Soda, energy drinks, and sports drinks are a major source of added sugar, and calories, in American diets.

10 consejos

Serie de educación en nutrición

elija MiPlato

10 consejos para crear un buen plato



Elegir alimentos para llevar un estilo de vida sano es muy sencillo si sigue estos 10 consejos. Use las ideas de esta lista para *balancear las calorías*, elegir los alimentos que le conviene *comer con mayor frecuencia* y reducir la cantidad de alimentos que le conviene *comer con menos frecuencia*.

1 balancee las calorías

El primer paso para controlar su peso es ver cuántas calorías USTED necesita al día. Vaya a www.ChooseMyPlate.gov para determinar la cantidad de calorías. Hacer actividades físicas también le ayuda a balancear las calorías.



2 disfrute de sus comidas, pero en cantidades más pequeñas

Tómese el tiempo necesario para disfrutar de sus comidas. El comer demasiado rápido o mientras se concentra en otras cosas puede resultar en que coma demasiadas calorías. Preste atención a las señales del hambre y de saciedad antes, durante y después de las comidas. Úselas para reconocer cuándo debe comer y cuándo ha comido suficiente.

3 evite las porciones extra grandes

Use platos, platos hondos y vasos más pequeños. Separe las porciones de alimentos antes de comer. Al salir a comer, elija las opciones de menor tamaño, comparta el platillo o llévese parte de la comida a casa.

4 alimentos que le conviene comer con más frecuencia

Coma más vegetales, frutas, granos integrales, y leche y productos lácteos sin grasa o con 1% de grasa. Esos alimentos contienen los nutrientes que necesita para la buena salud; entre ellos potasio, calcio, vitamina D y fibra. Haga de ellos la base de sus comidas y bocadillos.



5 haga que la mitad de su plato consista en frutas y vegetales

Al preparar sus comidas, elija vegetales rojos, anaranjados y verduras como tomates, camotes (batatas) y brócoli, así como otros vegetales. Agregue frutas a las comidas como parte de los platos principales o de acompañamiento, o bien como postres.

6 cambie a leche descremada o baja en grasa (1%)

Contienen la misma cantidad de calcio y otros nutrientes esenciales que la leche entera, pero sin tantas calorías y grasa saturada.



7 consuma la mitad en granos integrales

Para consumir más granos integrales, reemplace un producto de grano refinado por un producto de grano integral, como comer pan de trigo integral en lugar de pan blanco o arroz integral en lugar de arroz blanco.

8 alimentos que le conviene comer con menos frecuencia

Reduzca su consumo de alimentos con grasas sólidas, azúcar y sal adicionales. Estos incluyen pasteles (bizcochos), galletitas, helado, dulces, bebidas endulzadas, pizza y carnes grasas como costillas, chorizo, tocineta y salchichas. Use estos alimentos como antojitos ocasionales, no alimentos para todos los días.



9 compare el contenido de sodio de los alimentos

Use las etiquetas de Información Nutricional ("Nutrition Facts") para elegir sopas, panes y comidas congeladas con menos sodio. Elija alimentos enlatados marcados "bajo en sodio," "sodio reducido," o "sin sal adicional" ("low in sodium," "reduced sodium," o "without added salt").

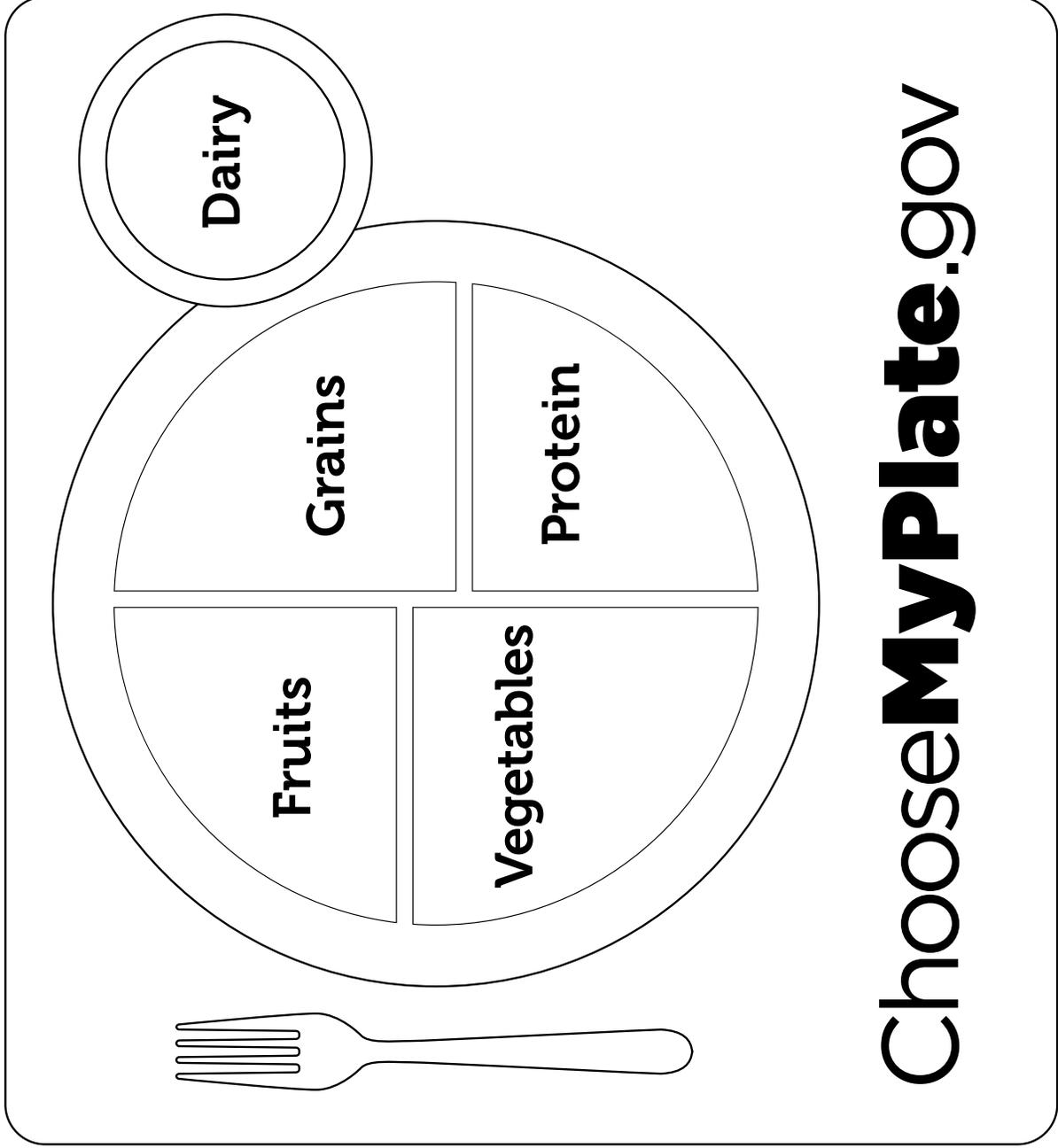
10 beba agua en lugar de bebidas endulzadas con azúcar

Reduzca las calorías al beber agua o bebidas sin azúcar. En las dietas de los estadounidenses, las gaseosas, bebidas de energía y bebidas deportivas representan grandes cantidades adicionales de azúcar y calorías.

NAME:

DATE:

Handout 3-3
MyPlate



ChooseMyPlate.gov

Lesson 4

Food Math

OBJECTIVES

- 🍌 To review the concepts of and information on MyPlate
- 🍌 To identify the recommended daily amounts to eat from each food group
- 🍌 To measure and identify standard food portion sizes through the use of visual cues
- 🍌 To create a daily menu based on recommendations from MyPlate

APPLICABLE CONTENT STANDARDS

- 🍌 English–language arts
- 🍌 Mathematic
- 🍌 Science

(See the matrix in Appendix B.)

Materials for In-class Lesson and Activities	Materials for Gardening Activity
<p>Handouts:</p> <ul style="list-style-type: none">4-1 Matching Cup and Ounce Equivalents with Visual Cues4-2 Food Math4-3 Activity Cards (one copy per class)“10 tips” <p>MyPlate poster</p> <p>Familiar objects (See the table Equivalents for Foods on page 62 for the items needed to complete handout 4-1.)</p> <p>Paper plates, bowls, cups, napkins</p> <p>Food for snacks (a few foods from the table on page 62)</p> <p>Masking tape</p>	<p>Handouts:</p> <ul style="list-style-type: none">4-4 Common Weeds in California <p><i>Optional materials:</i> Reference book(s) on weeds in your area (Contact the county cooperative extension for ideas.)</p>



Preparation for In-class Lesson and Activities	Preparation for Gardening Activity
<p>Day before the lesson: Photocopy handouts 4-1, 4-2, 4-3 (one copy), and the “10 tips.” Gather the materials.</p>	<p>Day before the lesson: Photocopy handout 4-4. Gather the materials.</p>
<p>Just before the lesson: Tape the large MyPlate poster onto the board and cover it with a sheet of blank newsprint. Cut out the activity cards. Set up stations for handout 4-1 in a corner of the classroom. Have students take out the nutrition folders.</p>	<p>Just before the lesson: Display the illustrations of common weeds in your area.</p>

Nutrition Lesson Activities

(60 min.)

1. Review of Lesson 3

Draw a circle on the newsprint covering the MyPlate poster.

- Why is MyPlate important?

It is a guideline that shows us that different foods fit into different groups. We need to eat foods from each of these food groups every day because together they provide the different nutrients that our bodies need to grow and stay healthy.

- What food groups are listed on MyPlate?

Have the students give the name of each food group on MyPlate and identify some of the foods that belong in each group.

For example, *grains group: cereal, bread, rice, tortilla*

Remember that the size of the portions on the MyPlate circle does not mean it is more or less important than another. Instead, it means we need to eat more from that group to get the right amount of nutrients.

Remove the blank sheet to display the MyPlate poster in color. Keep the newsprint MyPlate on the board so that you can write on it later.





2. Review of healthy food choices within each food group

(Refer to the MyPlate poster during the discussion.)

- Make half your plate fruits and vegetables.
- Add more vegetables to your day. Choose to eat a variety of vegetables each day, including dark green and orange vegetables.
- Focus on fruits. Include fruit for dessert or as a snack.
- Make at least half your grains whole. Look for ingredients such as brown rice, whole oats, and whole wheat in your grain foods.
- Got dairy today? Choose fat-free or low-fat (1 percent fat) milk.
- With protein foods, variety is key. Choose foods lower in fat, such as turkey, chicken, or beans.
- Get enough physical activity. Try to get 60 or more minutes of physical activity each day.

3. How much food do we need?

- Now that we know how to make healthier choices, let's take a closer look at how much we need from each food group.
- Write the recommended daily amounts on the newsprint MyPlate:
 - Vegetables—2 1/2 cups
 - Fruits—1 1/2 cups
 - Grains—6 ounces
 - Dairy—3 cups
 - Protein foods—5 ounces
- MyPlate gives the amounts to eat in ounces and cups. For the grains and protein food groups, amounts are given in ounces. For vegetables, fruits, and dairy, amounts are given in cups.
- There are several different ways to measure ounce and cup equivalents of foods. We can use measuring cups (wet and dry), measuring spoons, or a scale; or we can count whole pieces (for example, one slice of bread).
- Equivalent* means something that has the same amount or value. For example, the recommendation is 6 ounces of grains every day. One slice of bread is about 1 ounce, as is 1/2 cup of cooked rice. Those measures are equivalent, or have equal value, because the nutrients are present in similar amounts.

Note: Ounce equivalents for grains can also be measured in cups, for example, 1 cup ready-to-eat cereal or 1/2 cup cooked cereal. Ounce equivalents for protein foods may also be measured in tablespoons (for example, 1 tablespoon peanut butter).
- Unless you do a lot of cooking, these sizes can be difficult to picture. To help you, we are going to take a look at some ounce and cup equivalents and compare them to familiar objects.
- Provide the students with the opportunity to compare ounce and cup equivalents of some food items to familiar objects (see the chart “Equivalents for Foods”).



- 💧 Distribute handout 4-1. Ask the students to fill in the food group column on the left while you set up the stations.
- 💧 Place the food items listed in the chart in stations set up around the classroom. Each station will have an activity card, a food item, a measuring device (if applicable), and a familiar object (if applicable) that is equivalent to an ounce or a cup. For those stations that need a dry measuring cup, set out cups of several different sizes so that students can see the differences.
- 💧 Demonstrate one example to the class.
- 💧 Instruct the students to go around the room and look at the different ounce or cup equivalents and compare them to the more familiar objects. (Each station displays a one-ounce or one-cup equivalent.) Tell the students to match the ounce or cup equivalent with the familiar objects noted on handout 4-1.
- 💧 Although children will be handling food, remind them that this is not an eating activity. Provide a snack at the end of the activity as an incentive.
- 💧 Students do not need to write answers to the questions on the activity cards. The questions are used to provoke discussion.
- 💧 Mention which, if any, of the foods were selected from the garden. Ask the students, “Do you know how many ounce or cup equivalents you will get from one seed? From your whole garden?” Have the students predict the amounts and record those figures.
- 💧 Remember that two cups of raw leafy greens will look about the same as two cups of cereal because two cups will always look about the same size as a softball. That is why it is helpful to know some visual cues.

Equivalents for Foods

Food Stations	One Ounce or Cup Equivalents	Place in or on a . . .	Visual Cues Equal to One Ounce or Cup Equivalent
Apple	1 small	Plate	Your fist
Cooked rice*	1/2 cup	Bowl	Paper cupcake holder
Raisins	1/2 cup	Plate	2 small raisin boxes
Chopped lettuce	2 cups	Bowl	Softball
Milk	1 cup	10-oz. glass	School-lunch milk carton (8 oz.)
Cheese	1 1/2 oz.	Plate	3 dominoes
Peanut butter	1 tablespoon	Plate	Your thumb
Sandwich meat slices	1 oz.	Plate	1 CD

* After cooking the rice, mix in a small amount of oil to keep it from sticking.



4. Review activities

- 🍌 Distribute snacks to each group (optional).
- 🍌 Review the cup and ounce equivalent activity.
- 🍌 Direct students to complete the Food Math handout (4-2) and to circle those foods that can be grown in their garden. Review the students' work in class.

Gardening Activity

(30 MIN.)

- 🍌 Consult a local master gardener or a good reference book for pictures of weeds common to your area (such as *Weeds of the West*).* An Internet search may also provide information on weeds that grow in your area.

Some common weeds are oxalis, mallow (cheeseweed), dandelion, scarlet pimpernel, and many different annual grasses.

- 🍌 What is a weed?

A weed is a plant that is growing where we don't want it and often at a faster rate than the seeds we intentionally planted in the garden. Crops and weeds compete for nutrients, water, and sunlight. Since weeds grow so quickly, they absorb the nutrients from the soil that are intended for our crops. Before we go into the garden and start pulling "weeds," we need to make sure that we are removing weeds, not the vegetables we planted. To do this, we must first be able to identify the weeds.

- 🍌 Distribute the Common Weeds in California handout (4-4).
- 🍌 Have the students go out to the garden in small groups to identify and pull different weeds.
- 🍌 If time allows, have the students draw pictures of the weeds they were unable to identify in the garden. Use the references to identify the weeds.

(The idea for this activity was provided by Mary Shaw and Meg Grumio, Solano County Master Gardeners, University of California Cooperative Extension.)

*Tom D. Whitson, *Weeds of the West*, 9th ed. (Laramie, WY: Western Society of Weed Science in cooperation with the Western United States Land Grant Universities Cooperative Extension Services, 2006).



Additional Activities

1. Provide a small snack with the lesson on ounce and cup equivalents so that students will not eat the foods used as a part of the hands-on activity. Include foods from two or more of the food groups.
2. Take a closer look at the foods in a typical school lunch. (The nutrition services staff may be able to provide you with a sample meal.) Measure the amounts of each item. How many ounce equivalents is each item? Identify the food group into which each lunch item falls.
3. Have the students record the types and amounts of fruits and vegetables they eat for one to three days. Are they eating the recommended amounts? Are they eating a variety of healthful choices? One way to tell is whether they are eating a “rainbow of colors.”
4. Have the students record all the food they eat for one day and then compare their intake with the MyPlate recommendations. For additional math activities, graph the results for the whole class, determine the class average, or calculate the percentage of students who ate the recommended amount from each food group.





NAME: _____

DATE: _____

Handout 4-1

**Matching Cup and Ounce Equivalents
with Visual Cues**

Directions

- To the left of each food, write the name of the food group in which it belongs.
- Then draw a line from the cup or ounce equivalent of each food to the appropriate familiar object (visual cue).

Hint: You may see the familiar objects at the stations in the classroom.

Food Groups	Food	One Ounce or Cup Equivalents
	Apple	1 whole small
	Cooked rice	1/2 cup
	Raisins	1/2 cup
	Peanut butter	1 tablespoon
	Milk	1 cup
	Chopped lettuce	2 cups
	Cheese	1 1/2 ounces
	Sandwich meat	1 ounce

One Ounce or Cup Equivalent Looks About the Same Size as . . .
Your thumb
1 CD
Your fist
Softball
3 dominoes
Cupcake wrapper
2 small boxes
School-lunch milk carton



Handout 4-1

Matching Cup and Ounce Equivalents with Visual Cues—Answer Key

Directions

- To the left of each food, write the name of the food group in which it belongs.
- Then draw a line from the cup or ounce equivalent of each food to the appropriate familiar object (visual cue).
(*Hint: You may see the familiar objects at the stations in the classroom.*)

Food Groups	Food	One Ounce or Cup Equivalents	One Ounce or Cup Equivalent Looks About the Same Size as . . .
FRUIT	Apple	1 whole small	Your thumb
GRAIN	Cooked rice	1/2 cup	1 CD
FRUIT	Raisins	1/2 cup	Your fist
PROTEIN FOODS	Peanut butter	1 tablespoon	Softball
DAIRY	Milk	1 cup	3 dominoes
VEGETABLE	Chopped lettuce	2 cups	Cupcake wrapper
DAIRY	Cheese	1 1/2 ounces	2 small boxes
PROTEIN FOODS	Sandwich meat	1 ounce	School-lunch milk carton



NAME: _____

DATE: _____

Handout 4-2

FOOD MATH

Jason is nine years old. He's physically active sometimes. Each day, he needs to eat:

Vegetables	Fruits	Grains	Dairy	Protein Foods
2½ cups	1½ cups	6 ounces	3 cups	5 ounces

Help Jason decide what to eat today. Plan breakfast, lunch, dinner, and a snack. Be sure he gets all the food he needs from each group. (Food items may be selected more than once.)

Vegetables 2½ cups

- _____ 6 baby carrots* (½ CUP EQ.) 
- _____ 1 large ear of corn (1 CUP EQ.)
- _____ 1 medium baked potato (1 CUP EQ.)
- _____ 1 cup cooked greens* (1 CUP EQ.)
- _____ 1 large baked sweet potato* (1 CUP EQ.)
- _____ 3 spears broccoli* (1 CUP EQ.)
- _____ ½ cup tomato juice (½ CUP EQ.)
- _____ 1 cup chopped lettuce (½ CUP EQ.)

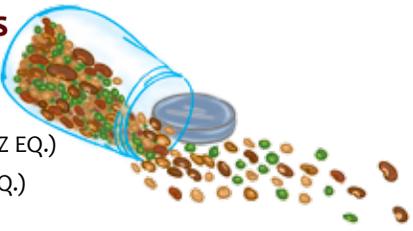
Items marked with a * are dark green or orange vegetables.

Grains 6 ounces

- _____ 1 slice whole-wheat toast* (1 OZ EQ.) 
- _____ 5 whole-wheat crackers* (1 OZ EQ.)
- _____ 1 slice white bread (1 OZ EQ.)
- _____ 1 slice whole-wheat bread* (1 OZ EQ.)
- _____ 1 cup whole-grain ready-to-eat breakfast cereal* (1 OZ EQ.)
- _____ ½ cup cooked brown rice* (1 OZ EQ.)
- _____ 1 cup cooked pasta (2 OZ EQ.)
- _____ 1 hamburger bun (2 OZ EQ.)
- _____ 3 cups low-fat popcorn* (1 OZ EQ.)

Items marked with a * are whole-grain.

Protein Foods 5 ounces

- _____ 1 ounce of nuts (2 oz eq.) 
- _____ 1 cup split pea soup (2 OZ EQ.)
- _____ 1 small chicken breast half (3 OZ EQ.)
- _____ 1 small lean hamburger (3 OZ EQ.)
- _____ 1 hard-boiled egg (1 OZ EQ.)
- _____ 1 tablespoon peanut butter (1 OZ EQ.)
- _____ ½ cup of pinto beans (1 OZ EQ.)
- _____ 1 slice of turkey (1 OZ EQ.)

Fruits 1½ cups

- _____ 1 small apple or ½ large apple (1 CUP EQ.) 
- _____ 1 large orange (1 CUP EQ.)
- _____ 1 snack-sized container of peaches (½ CUP EQ.)
- _____ 1 large plum (½ CUP EQ.)
- _____ 1 small box raisins (½ CUP EQ.)
- _____ 1 cup 100% orange juice (1 CUP EQ.)
- _____ 1 medium wedge cantaloupe (½ CUP EQ.)
- _____ 1 small wedge watermelon (1 CUP EQ.)

Dairy 3 cups

- _____ ½ cup low-fat or fat-free cottage cheese (½ CUP EQ.) 
- _____ 1 cup fat-free milk (1 CUP EQ.)
- _____ 1 snack-sized low-fat or fat-free yogurt (½ CUP EQ.)
- _____ 1 half-pint container 1% or 2% milk (1 CUP EQ.)
- _____ 2 ounces of low-fat or fat-free American cheese (1 CUP EQ.)
- _____ 1½ ounces of low-fat or fat-free cheddar cheese (1 CUP EQ.)
- _____ 1½ cups light ice cream (1 CUP EQ.)

Key: 1 OZ EQ. means 1-ounce equivalent.



Handout 4-3

Activity Cards

Directions for teachers: Photocopy these activity cards onto card-stock paper and cut out each one. Laminate the cards (if desired) and place them at each station.

APPLE

1 cup equivalent = 1 whole small

Activity:

1. Pick up the apple.
2. How does one serving compare to the size of your fist? Is it the same size?

COOKED RICE

1 ounce equivalent = 1/2 cup

Activity:

1. Put the rice into the correct measuring cup.
2. Put the rice back into the bowl.
3. A half cup of rice would be about the same size as what familiar object?



Handout 4-3

Activity Cards

Directions for teachers: Photocopy these activity cards onto card-stock paper and cut out each one. Laminate the cards (if desired) and place them at each station.

RAISINS

1 cup equivalent = $\frac{1}{2}$ cup

Activity: **DO NOT EAT!**

1. Put the raisins into your hand.
2. What does one serving of raisins feel like in your cupped hand?
3. Put the raisins back into the bowl.

PEANUT BUTTER

1 ounce equivalent = 1 tablespoon

Activity: **DO NOT TOUCH!**

1. Look at one serving of peanut butter.
2. One tablespoon is about the same size as what familiar object?
3. How many servings of peanut butter do you put on your peanut butter and jelly sandwich?



Handout 4-3

Activity Cards

Directions for teachers: Photocopy these activity cards onto card-stock paper and cut out each one. Laminate the cards (if desired) and place them at each station.

MILK

1 cup equivalent = 1 cup

Activity:

1. Carefully pour the milk into the measuring cup.
2. How much milk was in the glass?
3. Carefully pour the milk back into the glass.
4. How many servings of milk do you drink with your lunch?

RAW, LEAFY GREENS

1 cup equivalent = 2 cups

Activity:

DO NOT EAT!

1. Put the greens into the correct measuring cup.
2. How many servings of salad do you think you eat with dinner?
3. Put the leafy greens back into the bowl.
4. Two cups look about the same size as what familiar object?





Handout 4-3

Activity Cards

Directions for teachers: Photocopy these activity cards onto card-stock paper and cut out each one. Laminate the cards (if desired) and place them at each station.

CHEESE

1 cup equivalent = 1½ ounces

Activity: DO NOT EAT!

1. Carefully place the cheese on the scale.
2. How much does one serving of cheese weigh?
3. Put the cheese back on the plate.
4. One and one-half ounces look about the same size as what familiar object?

SANDWICH MEAT

1 ounce equivalent = 1 ounce

Activity: DO NOT EAT!

1. Carefully place the meat on the scale.
2. How many servings of meat do you think you put on your sandwich?
3. Put the meat back onto the plate.
4. One ounce of meat looks about the same size as what familiar object?



Handout 4-4

Common Weeds In California



Oxalis



Mallow (Cheeseweed)



Dandelion



Scarlet Pimpernel



Wild Oats



Soft Chess

10 tips

Nutrition
Education Series

build a healthy meal

10 tips for healthy meals



A healthy meal starts with more vegetables and fruits and smaller portions of protein and grains. Think about how you can adjust the portions on your plate to get more of what you need without too many calories. And don't forget dairy—make it the beverage with your meal or add fat-free or low-fat dairy products to your plate.

1 make half your plate veggies and fruits
Vegetables and fruits are full of nutrients and may help to promote good health. Choose red, orange, and dark-green vegetables such as tomatoes, sweet potatoes, and broccoli.

2 add lean protein
Choose protein foods, such as lean beef and pork, or chicken, turkey, beans, or tofu. Twice a week, make seafood the protein on your plate.



3 include whole grains
Aim to make at least half your grains whole grains. Look for the words "100% whole grain" or "100% whole wheat" on the food label. Whole grains provide more nutrients, like fiber, than refined grains.

4 don't forget the dairy
Pair your meal with a cup of fat-free or low-fat milk. They provide the same amount of calcium and other essential nutrients as whole milk, but less fat and calories. Don't drink milk? Try soy milk (soy beverage) as your beverage or include fat-free or low-fat yogurt in your meal.



5 avoid extra fat
Using heavy gravies or sauces will add fat and calories to otherwise healthy choices. For example, steamed broccoli is great, but avoid topping it with cheese sauce. Try other options, like a sprinkling of low-fat parmesan cheese or a squeeze of lemon.

6 take your time
Savor your food. Eat slowly, enjoy the taste and textures, and pay attention to how you feel. Be mindful. Eating very quickly may cause you to eat too much.

7 use a smaller plate
Use a smaller plate at meals to help with portion control. That way you can finish your entire plate and feel satisfied without overeating.

8 take control of your food
Eat at home more often so you know exactly what you are eating. If you eat out, check and compare the nutrition information. Choose healthier options such as baked instead of fried.

9 try new foods
Keep it interesting by picking out new foods you've never tried before, like mango, lentils, or kale. You may find a new favorite! Trade fun and tasty recipes with friends or find them online.



10 satisfy your sweet tooth in a healthy way
Indulge in a naturally sweet dessert dish—fruit! Serve a fresh fruit cocktail or a fruit parfait made with yogurt. For a hot dessert, bake apples and top with cinnamon.

10 consejos

Serie de educación en nutrición

cómo preparar platos sanos

10 consejos para platos sanos



Un plato sano comienza con más vegetales y frutas, y porciones más pequeñas de proteínas y granos. Piense en cómo ajustar las porciones en su plato para obtener más de lo que necesita sin demasiadas calorías. Tampoco olvide los productos lácteos; haga de ellos su bebida de acompañamiento o agregue a su plato productos lácteos descremados o con bajo contenido de grasa.

1 haga que la mitad de su plato consista en frutas y vegetales

Las vegetales y las frutas están repletas de nutrientes que tal vez le ayuden a promover la buena salud. Elija vegetales de color rojo, anaranjado y verde oscuro como tomates, camotes (batatas) y brócoli.

2 agregue proteínas magras

Elija alimentos ricos en proteína, como carne de res y cerdo magras, pollo y pavo, frijoles o tofu. Dos veces por semana, haga que la proteína en su plato provenga de pescados y mariscos.



3 incluya granos integrales

Intente que por lo menos la mitad de los granos consumidos sean granos integrales. Busque las designaciones “100% granos integrales” o “100% trigo integral” (“whole grain, whole wheat”) en las etiquetas. Los granos integrales contienen más nutrientes, como fibra, que los granos refinados.

4 no olvide los productos lácteos

Acompañe sus comidas con una taza de leche descremada o baja en grasa. Esta contiene la misma cantidad de calcio y otros nutrientes esenciales que la leche entera, pero con menos grasa y calorías. ¿No bebe leche? Pruebe leche de soja (bebida de soja) como su bebida, o bien incluya en su comida yogur descremado con bajo contenido de grasa.



5 evite la grasa adicional

El uso de salsas o aderezos espesos agregará grasas y calorías a comidas que de otro modo serían sanas. Por ejemplo, el brócoli al vapor es excelente, pero evite cubrirlo con salsa de queso. Pruebe otras opciones, como queso parmesano rallado bajo en grasa o jugo de limón.

6 coma con calma

Saboree la comida. Coma despacio, disfrute del sabor y las texturas, y preste atención a cómo se siente. Tenga en cuenta que comer demasiado rápido puede resultar en comer demasiado.

7 use un plato más pequeño

Use platos más pequeños a la hora de comida para controlar las porciones. De esa manera puede “limpiar el plato” y sentirse satisfecho sin comer demasiado.

8 controle sus alimentos

Coma en casa con más frecuencia para que sepa exactamente lo que come. Si sale a comer, estudie y compare la información de nutrición. Elija opciones más sanas como alimentos horneados en lugar de fritos.

9 pruebe alimentos nuevos

Mantenga el interés al elegir alimentos nuevos que tal vez nunca antes ha probado, como mangos, lentejas o lechuga japonesa. ¡Tal vez encuentre su nuevo alimento favorito! Intercambie recetas sabrosas y divertidas con sus amigos, o busque recetas nuevas en línea.



10 satisfaga el gusto dulce de manera sana

Permítase un postre naturalmente dulce: ¡frutas! Sirva ensalada de frutas frescas o un postre helado con yogur y fruta. Para un postre caliente, hornee manzanas y cúbralas con canela.



Family Activity

How can I tell if I am making healthful choices? Here are some great hints that will be easy for you and your family to remember.

Make half your grains whole—whole grains are higher in fiber and some nutrients than other grains.

Focus on fruits—variety is important. Eat different colors.

Got your dairy today?—dairy products are sources of calcium to build strong bones and teeth.

Add more vegetables to your day—most people do not eat enough vegetables, especially dark green and orange vegetables. They are important for a healthy body.

With protein foods, variety is key—protein is needed for growth, but too much will turn into fat.

Fruits and Vegetables—More Matters!

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

Directions:

1. List your family members' names, including yourself, on the left. (Use a separate sheet of paper if necessary.)
2. Starting today, draw a 😊 under "Day 1" each time you eat a cup of fruit or vegetables.
3. Tomorrow, draw a 😊 under "Day 2," and the next day draw a 😊 under "Day 3."
4. Who in your family eats the most fruits and vegetables? Discuss how you can eat more fruits and vegetables every day.
5. Bring this activity sheet back to class as soon as you have completed it.

Family Activity—Fruits and Vegetables

Family Member's Name	Day 1	Day 2	Day 3

Lesson 5

Food Labels

OBJECTIVES

- ☺ To create awareness of the Nutrition Facts label
- ☺ To learn how to locate different items of information on the label
- ☺ To learn how to compare foods based on information found on the label
- ☺ To make bug boxes and allow the students to collect and identify bugs in their garden

APPLICABLE CONTENT STANDARDS

- ☺ English–language arts
- ☺ Mathematics
- ☺ Science

(See the matrix in Appendix B.)

Materials for In-class Lesson and Activities	Materials for Gardening Activity
Handouts: <ul style="list-style-type: none">5-1 Food Label5-2 Point Cards (photocopy onto thicker paper; make enough cards for each student when cut)5-3 Food Label Activity Sheet5-4 Comparing Food LabelsSpot the BlockLet’s Play a GameUse the Nutrition Facts Label to Eat Healthier Overhead transparency of food label or enlarged copy (see page 86) Loaf of 100% whole wheat bread Foods with labels for activities (see handout 5-3) Masking tape	Handouts: <ul style="list-style-type: none">2 cans of tuna fish, 6 oz. size—rinsed12” square screen meshPlaster of parisWaterSmall plastic bag (snack-size, self-sealing)Insect stickers (optional)



Preparation for In-class Lesson and Activities	Preparation for Gardening Activity
<p>Day before the lesson: Photocopy handouts 5-1, 5-2 (limited copies), 5-3, 5-4, and Spot the Block, Let's Play a Game, and Use the Nutrition Facts Label to Eat Healthier Cut up point cards. Make a transparency of the label or enlarge it 120% to 8 1/2" x 14." Gather materials.</p>	<p>Day before the lesson: Gather materials. Prepare wire mesh (see directions under "Garden Activity.") Measure about 1/2 cup of the plaster of paris and place into each of the plastic self-sealing bags. Do not add water yet.</p>
<p>Just before the lesson: Tape a copy of the food label to the board or use a transparency. Have students take out nutrition folders.</p>	<p>Just before the lesson: Have the students work over a piece of scratch paper or newspaper.</p>

Nutrition Lesson Activities

(60 min.)

1. Review of lessons 1 through 4

- 🍌 Many topics have been discussed in the past four lessons. The three major topics are plant parts, nutrients, and MyPlate.
- 🍌 Can anyone name all the plant parts? (*Root, stem, leaf, flower, seed, and fruit*)
- 🍌 Can anyone name all the types of nutrients? (*Carbohydrates, protein, fat, vitamins, minerals, and water*)
- 🍌 Next we talked about MyPlate. Can someone tell me the names of the food groups? (*Grains, vegetables, fruits, dairy, and protein foods*)
 Make half your plate *fruits and vegetables*.
- 🍌 Who remembers how much of each food group we need to eat from each day?
Grains: 6 ounces; vegetables: 2 1/2 cups; fruit: 1 1/2 cups; dairy: 3 cups; protein foods: 5 ounces
- 🍌 What are some familiar objects that can help us remember these serving sizes?
Baseball = 1 cup; cupcake wrapper = 1/2 cup; cupped handful = 1/4 cup; 2 ping pong balls = 4 tbsp.; 3 dominoes = 1 1/2 ounces; 2 CDs or a deck of cards = 2-3 ounces

2. Background on Nutrition Facts label

- 🍌 So far, we have discussed the nutrients and the food groups separately. Now we are going to put the two together. Today we are going to look at a special tool called a Nutrition Facts food label to help us figure out which nutrients are contained in which foods. Then we are going to do some activities that will help us learn how to read those labels.



- Almost every food that comes in a package must have a label. The label tells us much about the food we are about to eat. (Show an example of a label on a package.)
- Brainstorm: Why is it important for foods to have labels?
(Labels show the nutrient content per serving, allow us to compare foods, and identify all ingredients, which is especially useful for people with allergies.)

3. Food label information

Distribute the food label handout (5-1). Refer to the enlarged Nutrition Facts label taped to the board or show a label on an overhead transparency.

Much information is on this label, but we are going to look at only six items. Show students the actual food from the label they are looking at, 100% whole wheat bread. (Labels may not match exactly.) As you go through each nutrient, highlight it on the board or transparency while students circle that nutrient on their handout. Some sections on the label are omitted to save time. Three sections have been labeled “Skip” because they are generally more appropriate for older children.

Serving size. This idea was introduced in Lesson 4 when we looked at serving sizes. This is important because the rest of the label will tell us how much of each nutrient is in one serving. Take out one serving of the bread: one slice. Then pull out two servings. How much of each nutrient would you have with two slices (e.g., for a sandwich)? (*Two times that listed on the label*) Half of a serving? (*Half of that listed on the label*)

Calories

- The amount of energy we get from foods is measured in calories just as length is measured in inches and weight is measured in pounds. We need energy to help us grow, play, and stay healthy. You are still growing; therefore, you need about 2,000 calories per day. If we get too little energy, our body cannot work well and it starts to slow down. However, if we get too many calories, our body stores it as fat.
- Which nutrients provide us with energy? (*Carbohydrates, protein, fat*) Write *energy* next to those nutrients on the label. The label even tells how many of those calories actually came from fat.

Total fat. When we look at Total Fat and the nutrients that follow, we see two numbers. One is followed by a *g* or *mg*, referring to *gram* and *milligram*, respectively. (Remember the scales that we used in Lesson 4 to measure ounces [1 ounce = 28 grams]?) One gram is about the same weight as one large paper clip.) The other number is a percentage.

Let’s take a minute to find out how the people who wrote the label got that percentage. These numbers are based on our minimum requirements for the different nutrients. *Minimum requirement* means that it is the smallest amount that most people need to eat to stay healthy. Some people need about 1,800 to 2,000 calories per day. At the bottom of the label, we will see how much of each of the nutrients we would need if we were to consume 2,000 calories a day. If our body needed 2,000 calories per day, we would need to eat about 65 g of total fat. Then we ask, how much of our minimum requirement are we getting with one serving of this food? Do the following calculation on the board:



$$\begin{array}{l} \text{(Total fat in} \\ \text{one serving} \\ \text{of bread)} \end{array} \div \begin{array}{l} \text{(Recommended fat} \\ \text{intake in a} \\ \text{2,000-calorie diet)} \end{array} \times 100\%$$

Example: $(2\text{g} \div 65\text{g}) \times 100\% = 3\%$

From now on, we are going to look only at the percentages for each food.

(Skip) **Saturated fat, trans fat, and cholesterol.** These are types of fat.

(Skip) **Sodium.** Also known as **salt.** The goal is to keep sodium intake below 2,400 mg.

(Skip) **Total carbohydrates.** This is another source of energy.

Dietary fiber. Think of your digestive tract as a big hose. If you kept putting more and more food in it, some might get stuck from time to time. Fiber is like a sponge that goes through and cleans out the hose and adds water to the food that is passing through you. The food travels more smoothly, and you have an easier time emptying your bowels in the bathroom. Therefore, fiber is very important in our diet. For children the recommended amount of daily fiber intake is calculated by using the following formula:

$$\text{Age} \times 1.5 \text{ grams} = \text{grams of fiber recommended}$$

For example, a ten-year-old should try to eat about 15 grams of fiber each day. Encourage the students to keep track of their fiber intake.

(Skip) **Sugars.** A type of carbohydrate that provides us with an immediate source of energy; however, the energy is used very quickly.

Protein. Who remembers why we need protein? (*To keep our muscles healthy and strong*) The heart is a strong muscle that beats every minute of every day. Protein is usually indicated on the label in grams (g), not as a percentage.

Vitamins and minerals. Four are always listed because people seem to have the most difficulty in eating enough of these. What does each do? (Recall from lesson 2.)

Vitamin A helps us see better.

Vitamin C helps us stay healthy and not become sick.

Calcium keeps our teeth and bones strong.

Iron keeps our blood healthy so it can carry oxygen.

(Skip) **Informative section.** This section includes a table with the amount of specific nutrients needed by an individual consuming 2,000 or 2,500 calories. This information is used to calculate the % Daily Value. It is going to be the same on every label, so put a small x through it because we will not talk about it any more today.





4. Assignment of points to food labels

- Distribute the point cards from handout 5-2.
- Some foods have more nutrients than do others and therefore are better for us. One way to figure out the nutrition value of a food is to play a counting game. In this game, each food is assigned a number of points based on how many nutrients it has. Let's go over how foods get points. What makes a food nutritious? (Have the students start with a closed fist and go through the sample label as the students count on their fingers. Circle on the board or on the overhead what gives the food points on the label.) Ask "How nutritious is it?"

One point is assigned to a food for each of the following items (*DV stands for daily value*):

- ≤ 200 calories
- ≤ 10% DV total fat
- ≥ 10% DV dietary fiber
- ≥ 10% DV protein (or 5 grams)
- ≥ 10% DV any vitamin or mineral (Look at each individual vitamin and mineral listed.)

(This may be a good time to teach students about the meaning of \geq and \leq signs.)

- How many points did the 100% whole wheat bread get? (4)
- The objective is to show students that many foods can fit into a healthful diet, but some foods are more nutritious than others.

5. Food label activity

- Distribute the Food Label Activity Sheet handout (5-3).
- Go over the handout together as a class by using the same whole wheat bread label on handout 5-1. Numbers are already on the handout, but point out where the numbers came from. Have the students circle the points by using the point cards.
- Set up around the room foods with Nutrition Facts labels. The students are to go to each table and complete the Food Label Activity Sheet handout (5-3). Students then return to their desks and figure out how many points each food gets. Food is not to be played with or eaten. (Offer a snack at the end as an incentive.) Mention to the students that some of the foods could be grown in their gardens; have students circle those foods.

6. Review activity

- When students finish, give them the Comparing Food Labels handout (5-4). Go over the answers as a class.



Gardening Activity

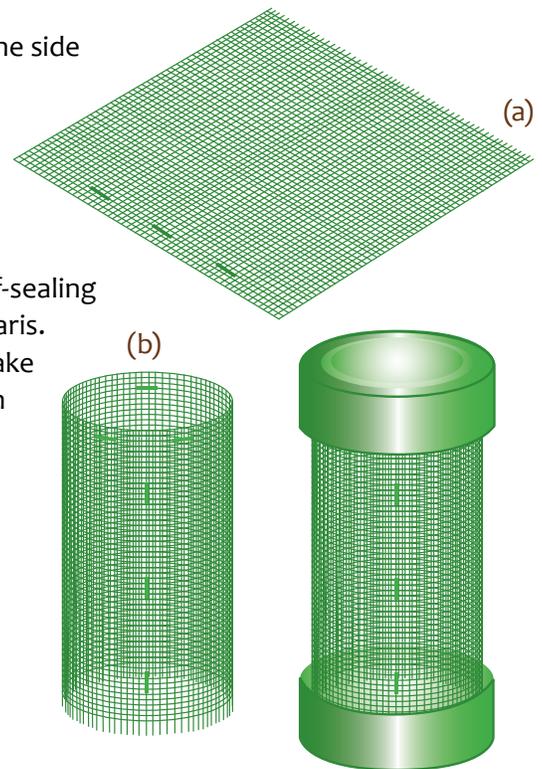
(30 min.)

Just as some foods are more beneficial to our body than others are, some creatures are more beneficial to our garden than other creatures are. But how do we know if the creatures in our garden are beneficial or not? One way to find out is to collect and identify them. Just as food labels tell us more information about the foods that we eat, there are books that provide information on the creatures in our garden. Some beneficial creatures are butterflies, birds, worms, ladybugs, bees, and frogs. They are beneficial because they eat the pests in the garden, help to pollinate the plants, or act as fertilizers to the soil. Some that are less beneficial (the pests) are snails, slugs, caterpillars, and aphids. These sometimes pose a bit of a problem to our garden because they like to eat our plants before we get a chance to harvest them. These unwanted pests may either be removed from the plants by hand or, sometimes, be washed off with water mixed with a little soap. In this activity students will make their own insect houses so they can collect and identify bugs in their garden.

Bug Box Instructions

(May be constructed individually or in small groups)

1. Prepare the wire mesh: (a) Fold over the sharp edges of one side and staple to secure. (b) Form the square into a cylinder with the now blunt edge on the top forming a circle (the size of the tuna fish can); staple to secure. (This step may need to be completed before you begin the class activity.)
2. Place about 1/2 cup of plaster of paris in a small plastic self-sealing bag. Add about 1/4 cup of water to the bag of plaster of paris. Zip the bag closed and mix the ingredients together to make a smooth paste. Pour the mixture into one of the tuna fish cans. This will be the base of the bug box.
3. Insert the wire mesh cylinder into the wet plaster of paris with the sharp side down. (The top that was folded over and stapled at the beginning should be at the top of the bug box.) Allow the plaster to set for several minutes.
4. Place the other tuna fish can on top of the mesh cylinder to serve as a removable lid. Make sure the lid does not fall off when bugs are inside the bug box.
5. Decorate with insect stickers (optional).



Collecting Bugs

1. Begin in the morning when most creatures are out in the garden. Do not forget to check underneath leaves; little ones like to hide there.
2. Look around your garden for interesting insects, slugs, or snails. Stay away from wasps, bees, and black widow spiders.





3. When you find something good, gently place it in your bug box with a few leaves and a little twig to make it feel at home.
4. Keep your box out of the sun and away from the heat. Observe your bug for a day or two. Consult a resource book and try to determine whether the bug is beneficial or harmful to your garden. Release the beneficial ones back into your garden and the harmful ones in a field far away from your garden.

Note: How can you tell whether the creature you collected is actually an insect? Insects have the following characteristics: three body parts, six jointed legs, two antennae, and one or two pairs of wings. For a good book on collecting and identifying insects, try *Insects of North America* (by George C. McGavin and published by Thunder Bay Press).

(The idea for this activity was provided by Solano County Master Gardeners, University of California Cooperative Extension.)

Additional Activities

1. Make a snack by using the following recipe:

Bugs on a Log

Celery: Washed and cut into 3-inch pieces

Peanut butter (or offer vanilla yogurt as a substitute to students who are allergic to peanuts)

Dried fruit (raisin, apricots, cranberries, and so on)

Paper napkins

Directions:

Spread the peanut butter or yogurt onto the celery (the log). Top with dried fruit (the bugs).

Eat and enjoy!

2. Some restaurants today will provide customers with information on the nutrient content of the foods that they serve. It is not usually presented in the same format as the Nutrition Facts label, but the same information is still available. Have students collect menus from their favorite restaurants and compare the foods on the basis of their nutrient content. Which restaurant seems to serve more (or less) nutritious foods? What would be your most nutritious choice at each restaurant? The least nutritious?
3. Have students compare the food labels from different foods in the same food group. Students can do this either as a homework assignment or in class. If the activity is done in class, divide the class into five or six groups and have them each work on a different food group. Make sure they all share their information with one another at the end. Have students determine as a class which foods would be better choices in each group and come up with acceptable substitutions (substituting more nutritious foods for less nutritious foods) within each group.
4. Have students who are not lactose-intolerant do a blindfolded taste test of milk with various levels of fat. (Make sure the milk is cold for this experiment.) Can they tell the difference between whole milk and 2% low-fat milk? Between 2% and 1%? Between 1% and nonfat? Distribute copies of the Nutrition Facts label from each of the types being tasted. Have the students figure out the



main differences between the types. How much would their fat intake decrease if they switched from the milk they are currently drinking to one with less fat? Is the amount of calcium the same in all types of milk? Students who are lactose-intolerant may do a blindfolded taste test of fruit juices. Can students detect the difference between a beverage with 5% juice and 100% juice? The amount of juice is noted on the label of the container.

5. The federal government requires food labels. Take the opportunity to talk about the role of the government in providing important information about U.S. food products to consumers. Visit the Web site <http://www.firstgov.gov> for detailed information on food labels.

Background Information

Since May 1994, federal law has required most food products to include a Nutrient Facts label somewhere on their packaging. Exceptions have been granted for unusually small products and those made and sold by local eateries. The format was designed for ease of reading. More details on the items listed on the label are noted below:

- The serving sizes noted on the label are generally similar to the amounts recommended by MyPlate. However, there are some exceptions, so always check the sizes. Serving sizes have also become more standardized than in past years. They are meant to reflect the amount consumed by the average individual. The amount in *one serving* is shown in both household and metric measurements. Information on the nutrient content is based on one serving. When less or more than one serving is consumed, the nutrient content needs to be adjusted accordingly.
- The number of servings per container is noted to indicate how much product is in one container. This is important to note when the entire contents of a container may be consumed in one sitting (e.g., small ice cream containers, macaroni and cheese, fat-free cookies, and beverages).
- Calories are the measurement of energy provided in one serving of the food. Fat, carbohydrates, and protein contribute calories to our body. Carbohydrates and protein provide 4 calories for each gram. For example, if there are 10 grams of carbohydrates, they would contribute 40 calories to the total calories per serving. Fat, on the other hand, provides 9 calories for each gram. Thus, 10 grams of fat would contribute 90 calories per serving. This information is provided at the bottom of the label under “Calories per gram.” The amount of each nutrient that one needs depends on the number of calories one needs each day. Daily caloric requirement for an individual is based on factors such as age, gender, and activity level. In general, people need to consume about 2,000 calories per day; more for more active individuals and fewer for less active individuals. The lower third of the label shows the amount of each nutrient recommended for two different calorie levels: 2,000 and 2,500. For example, an individual on a 2,000-calorie diet should aim to consume about 25 grams of fiber; on a 2,500-calorie diet, he or she should try to consume 30 grams of fiber. This section will be exactly the same on each label and is used to calculate the “% Daily Value” listed on the label.
- The “% Daily Value” seems to cause the most confusion. The number represents the percentage of the daily recommended amount of the nutrient (based on 2,000 calories) that is provided by one serving. The goal is to stay around 100% for all nutrients over the course of the day. This can be determined by adding up the percentages of all foods consumed throughout the day.



For the first six nutrients noted, you will see their gram weight and the corresponding % Daily Value. The % Daily Value for protein may or may not be listed. Here is a sample calculation:

$$\begin{array}{l} \text{(Total fat in} \\ \text{one serving} \\ \text{of product)} \end{array} \div \begin{array}{l} \text{(Recommended} \\ \text{maximum fat intake} \\ \text{in a 2,000-calorie diet)} \end{array} \times 100\%$$

Example: $(10\text{g} \div 65\text{g}) \times 100\% = 15\%$

It may be unrealistic for children to calculate their % Daily Value for a day. If this is the case, focus more on consuming a variety of foods from MyPlate.

- The amount of Total Fat in one serving includes the amount of saturated fats, unsaturated fats, and polyunsaturated fats. The three types are often listed separately under Total Fat. On average one should aim to consume less than the maximum recommended fat intake daily over the course of several days.
- The amount of cholesterol and sodium is noted on the label because, as with fat, people tend to consume them in excess and must take care to limit their intake of these for health reasons. Again, the goal is to stay below the maximum amount indicated for any given day.
- Total Carbohydrates include dietary fiber and sugars. Dietary fiber is an important nutrient that is often overlooked. It is responsible for “cleaning out” our digestive tract to ensure that food and waste products flow through it smoothly. It has also been shown to reduce the risk of some types of cancer. The sugars listed on the label include both added and naturally occurring sugars. The best way to determine the amount of added sugars is to read the ingredient label. If any type of sugar is noted as the first or second ingredient, it is very likely that most of the sugar noted on the label is from added sugars. Fruit and dairy products contain natural sugars.
- Protein is helpful in keeping our muscles healthy and strong. A “% Daily Value” is not always noted for protein because protein requirements are influenced by many other factors and a specific daily value has not been established.
- The remaining section of the label deals with vitamins and minerals. Manufacturers are required to include information on at least four of these; however, many labels include a few more. The required four are vitamin A, vitamin C, calcium, and iron. (See Lesson 2 for the functions of those vitamins and minerals.) The four nutrients are required on the label because individuals seem to have the most difficulty eating enough of these. The percentages noted are also based on the recommended daily intake levels. One should aim to get an average of 100% of these nutrients per day over the course of several days.
- The last important item on the label is the ingredient list. Ingredients are noted in descending order by weight, the first item having a greater total weight (in grams) than that of any of the remaining ingredients. Many people who are allergic to particular foods need to know this information. They must read ingredient labels carefully to avoid a health crisis that could be life-threatening.



Nutrition Facts Label

Sample label for Macaroni & Cheese

Nutrition Facts																													
Serving Size 1 slice (228 g) Servings Per Container 2																													
Amount Per Serving																													
Calories 250	Calories from Fat 110																												
% Daily Value*																													
Total Fat 12g	18%																												
Saturated Fat 3g	15%																												
<i>Trans</i> Fat 3g																													
Cholesterol 30mg	10%																												
Sodium 470mg	20%																												
Total Carbohydrate 31g	10%																												
Dietary Fiber 0g	0%																												
Sugars 5g																													
Protein 5g																													
Vitamin A	4%																												
Vitamin C	2%																												
Calcium	20%																												
Iron	4%																												
* Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.																													
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>Calories</th> <th>2,000</th> <th>2,500</th> </tr> </thead> <tbody> <tr> <td>Total Fat</td> <td>Less than</td> <td>65 g</td> <td>80 g</td> </tr> <tr> <td>Sat Fat</td> <td>Less than</td> <td>20 g</td> <td>25 g</td> </tr> <tr> <td>Cholesterol</td> <td>Less than</td> <td>300 mg</td> <td>300 mg</td> </tr> <tr> <td>Sodium</td> <td>Less than</td> <td>2,400 mg</td> <td>2,400 mg</td> </tr> <tr> <td>Total Carbohydrate</td> <td></td> <td>300 g</td> <td>375 g</td> </tr> <tr> <td>Dietary Fiber</td> <td></td> <td>25 g</td> <td>30 g</td> </tr> </tbody> </table>		Calories	2,000	2,500	Total Fat	Less than	65 g	80 g	Sat Fat	Less than	20 g	25 g	Cholesterol	Less than	300 mg	300 mg	Sodium	Less than	2,400 mg	2,400 mg	Total Carbohydrate		300 g	375 g	Dietary Fiber		25 g	30 g
	Calories	2,000	2,500																										
Total Fat	Less than	65 g	80 g																										
Sat Fat	Less than	20 g	25 g																										
Cholesterol	Less than	300 mg	300 mg																										
Sodium	Less than	2,400 mg	2,400 mg																										
Total Carbohydrate		300 g	375 g																										
Dietary Fiber		25 g	30 g																										

Source: United States Food and Drug Administration. *How to Understand and Use the Nutrition Facts Label*, 2009. <http://www.fda.gov/Food/LabelingNutrition/ConsumerInformation> (accessed March 6, 2009).





NAME: _____

DATE: _____

Handout 5-1

Your Turn—Nutrition Facts Label

Name of beverage: _____

1. Fill in the facts from your beverage container.

Nutrition Facts	
Serving Size	
Servings Per Container	
Amount Per Serving	
Calories	Calories from Fat
% Daily Value*	
Total Fat g	%
Saturated Fat g	%
<i>Trans</i> Fat g	
Cholesterol mg	%
Sodium mg	%
Total Carbohydrate g	%
Dietary Fiber g	%
Sugars g	
Protein g	
Vitamin A %	• Vitamin C %
Calcium %	• Iron %
* Percent Daily Values are based on a 2,000 calorie diet.	

2. How many servings are in the container? _____

3. Calculate the total calories in this beverage container. _____

4. Calculate total grams of sugars in this beverage container. _____



Handout 5-2

Point Cards

Directions for Teachers: Photocopy onto card stock paper, then cut out cards on the dotted lines. Each student should receive his or her own card. (Laminate if desired.)

One point is assigned if a food has:

- 200 or **fewer** CALORIES
- 10% or **less** TOTAL FAT
- 10% or **more** DIETARY FIBER
- 10% (5 grams) or **more** PROTEIN
- 10% or **more** of any VITAMINS or MINERALS

One point is assigned if a food has:

- 200 or **fewer** CALORIES
- 10% or **less** TOTAL FAT
- 10% or **more** DIETARY FIBER
- 10% (5 grams) or **more** PROTEIN
- 10% or **more** of any VITAMINS or MINERALS

One point is assigned if a food has:

- 200 or **fewer** CALORIES
- 10% or **less** TOTAL FAT
- 10% or **more** DIETARY FIBER
- 10% (5 grams) or **more** PROTEIN
- 10% or **more** of any VITAMINS or MINERALS

One point is assigned if a food has:

- 200 or **fewer** CALORIES
- 10% or **less** TOTAL FAT
- 10% or **more** DIETARY FIBER
- 10% (5 grams) or **more** PROTEIN
- 10% or **more** of any VITAMINS or MINERALS

One point is assigned if a food has:

- 200 or **fewer** CALORIES
- 10% or **less** TOTAL FAT
- 10% or **more** DIETARY FIBER
- 10% (5 grams) or **more** PROTEIN
- 10% or **more** of any VITAMINS or MINERALS

One point is assigned if a food has:

- 200 or **fewer** CALORIES
- 10% or **less** TOTAL FAT
- 10% or **more** DIETARY FIBER
- 10% (5 grams) or **more** PROTEIN
- 10% or **more** of any VITAMINS or MINERALS

One point is assigned if a food has:

- 200 or **fewer** CALORIES
- 10% or **less** TOTAL FAT
- 10% or **more** DIETARY FIBER
- 10% (5 grams) or **more** PROTEIN
- 10% or **more** of any VITAMINS or MINERALS

One point is assigned if a food has:

- 200 or **fewer** CALORIES
- 10% or **less** TOTAL FAT
- 10% or **more** DIETARY FIBER
- 10% (5 grams) or **more** PROTEIN
- 10% or **more** of any VITAMINS or MINERALS



Source: The point-counting game was adapted from *Label-Ease*, developed by the National Dairy Council, 1994.

NAME:

DATE:

Handout 5-3

Food Label Activity Sheet

Directions:

1. In the left column, write the name of the food group in which the food belongs.
2. To the right of each food, fill in the nutrient information for one serving by reading the Nutrition Facts label.
3. Using your Point Card, circle which nutrients will give the food points. Add the total number of points for each food.

		% Daily Value									
Food Group	Name of Food	Calories	Total Fat %	Dietary Fiber %	Protein % or g	Vitamin A %	Vitamin C %	Calcium %	Iron %	Total Points	
Grains	Whole wheat bread	100	3%	11%	5g	0%	0%	6%	6%	4	
	Raisin-bran cereal										
	Chocolate doughnuts										
	Frozen strawberries										
	Fruit juice										
	Baby carrots										
	Low-fat yogurt										
	Canned tuna										

Food Label Activity Sheet—Answer Key

Directions:

1. In the left column, write the name of the food group in which the food belongs.
2. To the right of each food, fill in the nutrient information for one serving by reading the Nutrition Facts label.
3. Using your Point Card, circle which nutrients will give the food points. Add the total number of points for each food.

		% Daily Value										Total Points
Food Group	Name of Food	Calories	Total Fat %	Dietary Fiber %	Protein % or g	Vitamin A %	Vitamin C %	Calcium %	Iron %			
Grains	Whole wheat bread	100	3%	11%	5g	0%	0%	6%	6%		4	
Grains	Raisin-bran cereal	200	2%	32%	6g	15%	0%	4%	25%		6	
Grains/fats and sweets	Chocolate doughnuts	200	18%	0%	2g	0%	0%	2%	6%		1	
Fruit	Frozen strawberries	50	0%	8%	1g	0%	90%	2%	4%		3	
Fruit	Fruit juice	140	0%	0%	0g	0%	25%	0%	0%		3	
Vegetable	Baby carrots	44	0%	12%	1g	350%	8%	2%	0%		4	
Dairy	Low-fat yogurt	260	5%	0%	9g	2%	10%	30%	0%		4	
Protein	Canned tuna	60	1%	0%	13g	0%	0%	0%	2%		3	



NAME: _____

DATE: _____

Handout 5-4

Comparing Food Labels

Directions: Use your Food Label Activity Sheet to answer the following questions.

1. Which food would be the *most nutritious* snack?

(Hint: Which food has the most points?) _____

2. Which food would be the *least nutritious* snack?

(Hint: Which food has the fewest points?) _____

3. What is one food that you could choose for a *low-fat* snack? (Hint: There is more than one correct answer.) _____

4. *Fiber* helps food move through your body more smoothly. Which food has the most fiber? _____

5. Your body needs *protein* to help keep your muscles strong and healthy. Which food is high in protein? _____

6. Your body needs *vitamin A* to help your eyes see better. Which snack has the most vitamin A? _____

7. Your body needs *vitamin C* to help you feel better if you are sick. Which fruit has more vitamin C? _____

8. Your body needs *calcium* to help keep your bones and teeth strong. Which snack is high in calcium? _____

9. Your body needs *iron* to keep your blood healthy. Which food has a lot of iron? _____

10. Which would be a more healthful choice for breakfast: the cereal or chocolate doughnuts? (Hint: Which has more points?) _____



Handout 5-4

Comparing Food Labels—Answer Key

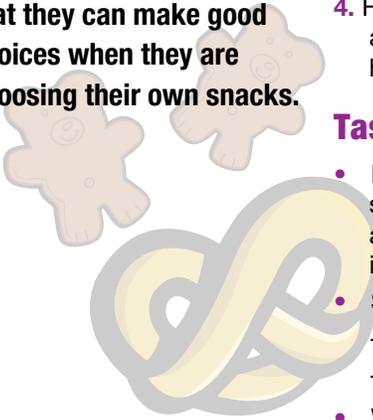
Directions: Use your Food Label Activity Sheet to answer the following questions.

1. Which food would be the *most nutritious* snack?
(Hint: Which food has the most points?)
RAISIN-BRAN CEREAL
2. Which food would be the *least nutritious* snack?
(Hint: Which food has the fewest points?)
CHOCOLATE DOUGHNUTS
3. What is one food that you could choose for a *low-fat* snack? (Hint: There is more than one correct answer.)
WHOLE WHEAT BREAD, RAISIN-BRAN CEREAL, FROZEN STRAWBERRIES, FRUIT JUICE, BABY CARROTS, LOW-FAT YOGURT, CANNED TUNA
4. *Fiber* helps food move through your body more smoothly. Which food has the most fiber?
RAISIN-BRAN CEREAL
5. Your body needs *protein* to help keep your muscles strong and healthy. Which food is high in protein?
CANNED TUNA
6. Your body needs *vitamin A* to help your eyes see better. Which snack has the most vitamin A?
BABY CARROTS
7. Your body needs *vitamin C* to help you feel better if you are sick. Which fruit has more vitamin C?
FROZEN STRAWBERRIES
8. Your body needs *calcium* to help keep your bones and teeth strong. Which snack is high in calcium?
LOW-FAT YOGURT
9. Your body needs *iron* to keep your blood healthy. Which food has a lot of iron?
RAISIN-BRAN CEREAL
10. Which would be a more healthful choice for breakfast: the cereal or chocolate doughnuts?
(Hint: Which has more points?)
RAISIN-BRAN CEREAL



Spot the Block When Choosing Snacks

Any time is a good time to talk about nutrition and healthy eating. More and more children and tweens are spending time alone after school—and you help your kids **Spot the Block** so that they can make good choices when they are choosing their own snacks.



The Activity

1. Ask your kid(s) to select a bag of cereal, chips, **cookies, crackers or pretzels**. Have them measure out how much they would usually eat for a snack into a bowl. (Make sure they don't peek at the label.)
2. Next, have them **Spot the Block** (check the serving size on the Nutrition Facts Label) and measure out a "serving" according to the Nutrition Facts Label into another bowl.
3. Together, **compare the two portions**. Discuss how the two amounts differ. Are they surprised to see what an actual serving size for this snack is?
4. Figure out the calories of what they typically eat for a snack. Remind them that if they are eating two servings, they will need to **double the calories** per serving to calculate how many calories they are actually eating.

Tasty Tips for Snacks

- Encourage portion control for snacking, and work with your children to measure out the servings for favorite snacks. The snacks can then be portioned out into single servings according to the amount listed as a "serving size" on the nutrition label. Try using individual, snack-size plastic self-sealing bags.
- Some healthy, filling snack choices are:
 - Baked chips
 - Dried fruits
 - Trail mixes with nuts
 - Low-fat yogurt and low-fat cheeses
- When considering calories, keep this easy range in mind: 100 is moderate and 400 is high.

Recap Questions

1. What did you like the best about this activity?

2. What did your child say about this activity?

3. What do you think your child learned, if anything?



Lea la tabla al elegir bocadillos

Cualquier momento es un buen momento para hablar de nutrición y alimentación saludable. Cada vez más niños y preadolescentes pasan tiempo solos después de la escuela; usted puede ayudarlos a **Leer la tabla** para que puedan tomar buenas decisiones cuando escogen sus bocadillos.

La actividad

1. Pídale a sus hijos que elijan una bolsa de cereal, papas fritas, **galletas dulces o saladas, o pretzels**. Haga que midan en un tazón cuánto comerían normalmente como bocadillo. (Asegúrese de que no miren la etiqueta).
2. Luego, hágalos **Leer la tabla** (comprueben el tamaño de la porción en la etiqueta de información nutricional) y que midan en otro tazón una “porción” de acuerdo con la etiqueta de información nutricional.
3. Juntos **comparen las dos porciones**. Hablen sobre la diferencia entre las dos cantidades. ¿Les sorprende ver cuánto es el tamaño real de la porción para este bocadillo?
4. Calcule las calorías de lo que suelen comer como bocadillo. Recuérdeles que, si comen dos porciones, deberán **duplicar las calorías** por porción para calcular cuántas calorías están incorporando.

Consejos sabrosos para bocadillos

- Estimule el control de porciones para los bocadillos y trabaje con sus hijos para medir las porciones de sus bocadillos favoritos. Los bocadillos pueden luego separarse en porciones individuales según la cantidad que figura como “tamaño de la porción” en la etiqueta nutricional. Intente utilizar bolsas con cierre del tamaño de una porción.
- Algunas opciones de bocadillos saludables y que satisfacen son las siguientes:
 - Papas asadas
 - Frutos secos
 - Cóctel de frutos secos con nueces
 - Yogur bajo en grasas y quesos bajos en grasas
- Al pensar en las calorías, tenga en cuenta este sencillo parámetro: 100 es moderado y 400 es alto.

Preguntas de recapitulación

1. ¿Qué fue lo que más le gustó de esta actividad?

2. ¿Qué dijo su hijo sobre esta actividad?

3. ¿Qué piensa que aprendió su hijo, si aprendió algo?



SPOT The Block



Let's play a game!

The most important thing to remember is that there are no “good” foods or “bad” foods. However, some foods are more nutritious than others. This means that they will provide our bodies with more nutrients. How can we tell whether a food is nutritious? We can play a counting game! The more points a food gets, the more nutritious it is!

For this game, we will look only at the % Daily Value (DV) that one serving of a food provides. A food gets points if it has:

- > 200 or **fewer** CALORIES
 - > 10% DV or **less** of TOTAL FAT
 - > 10% DV or **more** of DIETARY FIBER
 - > 10% DV (or 5 grams) or **more** of PROTEIN
 - > 10% DV or **more** of any VITAMIN or MINERAL
- (Hint: The magic number is “10” for most nutrients.)

Let's play the counting game using the label on the front. How many points would 1 serving of 100% whole wheat bread get? It would get 1 point for having:

100 Calories-----	1 point	} For a total of 4 points!
3% of Total Fat-----	1 point	
11% of Dietary Fiber-----	1 point	
5 grams of Protein -----	1 point	

How does this compare to the bread you have at home?

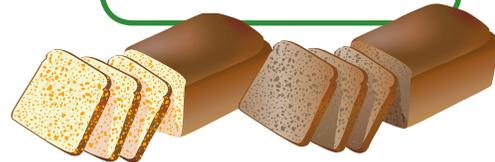
Family Activity

When you are at home or at the grocery store, compare the labels from:

Two cereal boxes to see which one has more iron.



Two loaves of bread to see which one has more fiber.



Three of your favorite snacks and decide which snack is the most nutritious by playing the counting game described above.

USE THE NUTRITION FACTS LABEL TO EAT HEALTHIER

Check the serving size and number of servings.

- The Nutrition Facts Label information is based on ONE serving but many packages contain more. Look at the serving size and how many servings you are actually consuming. If you double the servings you eat, you double the calories and nutrients, including the % DVs.
- When you compare calories and nutrients between brands, check to see if the serving size is the same.

Calories count, so pay attention to the amount.

- This is where you'll find the number of calories per serving and the calories from fat in each serving.
- Fat-free doesn't mean calorie-free. Lower fat items may have as many calories as full-fat versions.
- If the label lists that 1 serving equals 3 cookies and 100 calories, and you eat 6 cookies, you've eaten 2 servings, or twice the number of calories and fat.

Look for foods that are rich in these nutrients.

- Use the label not only to limit fat and sodium, but also to increase nutrients that promote good health and may protect you from disease.
- Some Americans don't get enough vitamins A and C, potassium, calcium, and iron, so choose the brand with the higher % DV for these nutrients.
- Get the most nutrition for your calories—compare the calories to the nutrients you would be getting to make a healthier food choice.

Nutrition Facts

Serving Size 1 cup (228g)
Servings Per Container 2

Amount Per Serving

Calories 250	Calories from Fat 110
% Daily Value*	
Total Fat 12g	18%
Saturated Fat 3g	15%
Trans Fat 3g	
Cholesterol 30mg	10%
Sodium 470mg	20%
Potassium 700mg	20%
Total Carbohydrate 31g	10%
Dietary Fiber 0g	0%
Sugars 5g	

Protein 5g

Vitamin A	4%
Vitamin C	2%
Calcium	20%
Iron	4%

* Percent Daily Values are based on a 2,000 calorie diet. Your Daily Values may be higher or lower depending on your calorie needs.

	Calories:	2,000	2,500
Total fat	Less than	65g	80g
Sat fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

The % Daily Value is a key to a balanced diet.

The % DV is a general guide to help you link nutrients in a serving of food to their contribution to your total daily diet. It can help you determine if a food is high or low in a nutrient—5% or less is low, 20% or more is high. You can use the % DV to make dietary trade-offs with other foods throughout the day. The * is a reminder that the % DV is based on a 2,000-calorie diet. You may need more or less, but the % DV is still a helpful gauge.

Know your fats and reduce sodium for your health.

- To help reduce your risk of heart disease, use the label to select foods that are lowest in saturated fat, trans fat and cholesterol.
- Trans fat doesn't have a % DV, but consume as little as possible because it increases your risk of heart disease.
- The % DV for total fat includes all different kinds of fats.
- To help lower blood cholesterol, replace saturated and trans fats with monounsaturated and polyunsaturated fats found in fish, nuts, and liquid vegetable oils.
- Limit sodium to help reduce your risk of high blood pressure.

Reach for healthy, wholesome carbohydrates.

- Fiber and sugars are types of carbohydrates. Healthy sources, like fruits, vegetables, beans, and whole grains, can reduce the risk of heart disease and improve digestive functioning.
- Whole grain foods can't always be identified by color or name, such as multi-grain or wheat. Look for the "whole" grain listed first in the ingredient list, such as whole wheat, brown rice, or whole oats.
- There isn't a % DV for sugar, but you can compare the sugar content in grams among products.
- Limit foods with added sugars (sucrose, glucose, fructose, corn or maple syrup), which add calories but not other nutrients, such as vitamins and minerals. Make sure that added sugars are not one of the first few items in the ingredients list.

For protein, choose foods that are lower in fat.

- Most Americans get plenty of protein, but not always from the healthiest sources.
- When choosing a food for its protein content, such as meat, poultry, dry beans, milk and milk products, make choices that are lean, low-fat, or fat free.

Lesson 6

Get Physically Active

OBJECTIVES

- ☺ To understand the importance of both physical and mental activities
- ☺ To understand the importance of the heart, warm-ups, stretches, and water to the body, especially for physical activity
- ☺ To learn how to incorporate exercise into our daily lives
- ☺ To water and fertilize the garden

APPLICABLE CONTENT STANDARDS

- ☺ English–language arts
- ☺ Mathematics
- ☺ Science

(See the matrix in Appendix B.)

Materials for In-class Lesson and Activities	Materials for Gardening Activity
Handouts: 6-1 What Is My Pulse? 6-2 Physical Activity Crossword Puzzle “10 tips” Fact Sheet for Adults Recommendations for Physical Activity (Spanish) Water bottles for students (if possible)	Handouts: Fertilizer (Check with a master gardener in the county or a local nursery to find the most effective fertilizer for your garden.) Additional tools may be needed depending on the fertilizer used.

Preparation for In-class Lesson and Activities	Preparation for Gardening Activity
Day before the lesson: Photocopy handouts 6-1, and 6-2, “10 tips,” Fact Sheet, and Recommendations (as needed) Fill water bottles.	Day before the lesson: Gather materials.
Just before the lesson: Have students take out nutrition folders.	



Nutrition Lesson Activities

(60 min.)

1. Review of lesson 1

- During the first lesson, we talked about several things that our bodies need to grow and stay healthy: *food, water, air, exercise, and sleep*
- So far we have spent a lot of time learning about the foods we need. Today we are going to look at the types of exercise our bodies need and why we need water.

2. Introduction

- To stay healthy, there are two types of activity we need to do every day:
Mental activity: Our minds are put to work.
Physical activity: Our bodies are put to work. (*Use energy and burn calories.*)
- What are some mental activities you like to do?
Studying, learning, planning a garden, watching an educational video, playing an educational computer game, thinking, sleeping (Our brain gets a chance to rest.)
- What are some physical activities you like to do?
Growing, jumping jacks, running, playing sports, lifting weights, gardening (and related outdoor activities), cleaning
- Why is it so important to keep our bodies and minds active?
Keeps us healthy, prevents injury, helps us play sports, strengthens muscles, makes us smart
- To be “inactive” means that you are not using your mind or your body. What are some mentally and physically *inactive* things that you do?
Watching TV, playing computer/video games
Today we are going to use our minds as we learn how to use our bodies to stay healthy.

3. The heart muscle

- Does anyone know which muscle in your body is the most important?
(Heart muscle) Why do you think it is so important?
(Because it pumps blood throughout your entire body all day and every day.)
- It is about the size of your fist and continually pumps blood throughout your body. Its job is to bring blood, filled with oxygen from the lungs, to all the cells in our body. Our heart has a very important job to do. To make sure that it stays in shape, we must exercise it as we do all our other muscles. We can do this by staying physically active.

4. Finding our pulse

- Today we are going to take a look at how hard our heart works for us. The number of times your heart beats in one minute is called your *pulse*.





- Locate your pulse and you will be able to feel the beating of your heart. There are four simple ways to find your pulse. (Everyone needs to be very still and quiet; apply some pressure but do not push too hard.)
 - a. Place two fingers gently on one side of the neck just below the chin and off to the side. It sometimes helps to start by grabbing your earlobe and then sliding your two fingers down the underside of your jawbone to your throat. Can you feel your pulse?
 - b. With the palm of one hand up, slide two fingers of the opposite hand down the side of your thumb to your wrist. You will notice a small groove just on the underside of your wrist, below the heel of your hand by the thumb. Can you feel your pulse?
 - c. Bend the wrist of one hand forward, cup two fingers from the opposite hand around the bone on the middle of the bent wrist (fingertips should be below the thumb). Can you feel your pulse?
 - d. Place the palm of the hand over the chest. (This is a last resort because it is the least accurate method.) Can you feel your pulse?
- Taking our pulse (Help students find their pulse as you distribute the What Is My Pulse? handout [6-1]; encourage students to help each other.)
 - 💧 Relax.
 - 💧 Practice counting beats.
 - 💧 Count number of beats for six seconds starting with zero. (Clearly say “start” and “stop.”)
 - 💧 Multiply the number by ten and demonstrate on the board. (There are 60 seconds in a minute and that is why we multiply by 10.)
 - 💧 Record the resting pulse on the What Is My Pulse? handout (6-1). (The students’ resting pulse should be about 80 beats per minute.)

5. Three tips

- **Warm up.** Exercise requires the use of our muscles (tissue in our bodies). We need muscles to help us move and even to help us stand still. (Have everyone stand still and take notice of some of the muscles that are holding him or her up.)

Have everyone march in place and swing arms for one minute as they take notice of the muscles that are currently working. Go through each muscle group. Do you feel the muscles in your legs working? Your arms? Your heart?

At the end of one minute, have the students quietly and quickly find their pulse. They count the beats for six seconds and record their pulse on hand- out 6-1 in the box across from “Warm-up.”

- **Stretch.** Now that our muscles are warmed up, we need to stretch them to make sure they are ready for our activity. Think of your muscles as tight rubber bands that move the whole time you exercise. It is important that we stretch them before we exercise; otherwise we could get



hurt. We need muscles to be *flexible* before we are physically active. *Flexible* means that a muscle is able to move easily; *inflexible* means that it is stiff. Do the flamingo and tree-limb stretch (see “Background Information”). Hold each stretch for 10–15 seconds on each side. Make sure to talk about safety: hold the stretch, do not bounce, stop if you feel pain, keep breathing. We must also remember to do these stretches before we work in the garden because we use muscles in our arms and legs. It is important to stretch *after* we exercise and allow our bodies to cool down and help the muscles to relax.

Have students recheck their pulse for six seconds and record on handout 6-1 (quietly and quickly while sitting at their desks).

- **Drink water.** Brainstorm about why we need water. Water is the most important nutrient and the one that is most often forgotten. Our bodies are made up of about 65% water. Some of this water is lost every day when we go to the bathroom, sweat (our body sweats to cool down), and even breathe (have everyone breathe onto their hand and feel the moisture). To replace the water, we need to drink the equivalent of about eight glasses of water every day. We need to drink even more water if we are physically active. Why do you think this is true? (*We breathe faster, our blood is flowing more quickly, and our body sweats more to cool down.*) It is important to drink plenty of water before, during, and after exercising.

Distribute water to students. Have them drink some now, some during the exercises, and some at the end of the lesson.

Plants need water too. They use some water to make food and some evaporates, so plants need to be watered continually. How do plants get their water? (*From the soil, through their roots*) What happens if they get too little water? Too much water?

6. Physical activity

- Now that we have warmed up, stretched, and have had some water, let’s get physically active!
- There are two types of exercise that we can do: aerobic and anaerobic. During aerobic exercise, our bodies use oxygen to produce the energy we need. (*Hint: You tend to breathe faster during this type of exercise; think of “air”-obic exercises.*) During anaerobic exercise, our bodies do not use oxygen to produce energy. (*Hint: These exercises work your muscles to get them big and strong.*) Have the students think of other ways to remember which exercise is which. Some activities fit into both categories. Let’s go through examples of each:

Aerobic

- Brainstorm some examples. (*Running, jumping, playing sports, swimming, biking, skiing, raking, digging*)
- Have the students do 25 jumping jacks. (Allow for elbow space between students.)
- Recheck the pulse for six seconds and record on handout 6-1 (quietly and quickly).
- Drink some water.
- How many felt your pulse increase?





Anaerobic

- 💧 Brainstorm some examples.
(*Lifting weights, strengthening muscles, lifting heavy bags and tools, planting*)
- 💧 Have the students do 10 desk push-ups and 10 tiptoe heel raises. (See details in “Background Information.”)
- 💧 Recheck pulse for six seconds and record on handout 6-1 (quietly and quickly).
- 💧 Drink some water.
- 💧 How many felt your pulse go down from where it was following the aerobic exercise?

7. Cool down

- 🍌 Cooling down is important because it signals to our bodies that our physical activity is ending. Our heart rates start to slow down, and our muscles start to cool.
- 🍌 Have the students slowly raise their hands above their heads. They stretch toward the ceiling and take a deep breath. Repeat. Have the students quietly sit down at their desks.
- 🍌 Recheck the pulse for six seconds and record on handout 6-1 (quietly and quickly).

8. Review activity

- 🍌 Have students complete the crossword puzzle by using the vocabulary from this lesson.
- 🍌 If there is time, have the students play a game of charades. Have them act out an activity in groups. The group that guesses correctly gets the next turn. Do not forget to drink your water.

Gardening Activity

(30 min.)

Consider taking half of the class out to the garden while the other half works in the classroom on the crossword puzzle activity.

In the garden, talk to the students about the importance of water to the plants. The plants should already have received water for the past several weeks. Just as our bodies would dehydrate following physical activity without water, so will the plants. Growth is a plant’s primary form of physical activity.

In addition, as we need to eat a variety of fruit, vegetable, dairy, protein, and grain products to give our bodies needed nutrients for proper growth, plants need to get needed nutrients for proper growth. Remember, as plants grow, they take nutrients from the soil, and those nutrients eventually need to be replaced. Replacement of nutrients can be accomplished by using worms or compost as discussed in lesson 2 or by adding other fertilizers. The fertilizer you use will depend on the type of soil in your garden and the crops being grown. One fertilizer option is a liquid fish emulsion, which is available for purchase at most nurseries. It is important to dilute it before adding it to the soil because it is concentrated. Watering and fertilizing can be accomplished at the same time because



fish emulsion may be diluted in a watering can. It is a bit smelly, so try to keep it off your skin and clothes. Consult a master gardener or local nursery for other fertilizer options.

Have the students fertilize their garden. This may also be a good time to pull some of the weeds that may have started to surface. Have the students refer to their activity from Lesson 4.

If space is available, consider preparing a new garden bed for another project or another class. This is an excellent form of physical activity. Do not forget to rehydrate yourself after all this work.

Additional Activities

1. Make a power shake. Consult the nutrition services staff for ideas. Encourage the students to choose the ingredients. Try to use only 100% real fruit or vegetable juices (check the label to see what percentage of the juice is actually fruit), low-fat yogurts, and fruits or vegetables. The goal is to make a snack that rehydrates the body but does not contribute a lot of fat.
2. Have the students keep track of their water consumption and exercise habits for one to three days.
3. Set and record exercise goals.
4. Have the students write two short stories as a reinforcement activity: one about the life of a very active person and one about the life of a very sedentary person. Encourage several students to share their stories with the class. This is an opportunity to see whether the students recognize some of the benefits of an active lifestyle.
5. Have the students write a report on a disease for which the treatment calls for physical activity. Examples are cardiovascular disease, osteoporosis, obesity, diabetes, and arthritis.
6. Teach the entire lesson in the garden and use more garden-related activities and tools.
7. If you have a garden that is not close to the classroom, walk the students to the garden and back every day on the way to recess or lunch. This walk also sparks students' interest in the garden.
8. Take the students out to the garden to discuss the use of tools and the physical activity involved in using them. Pick several tools and practice using them. Remember to discuss tool safety.





Background Information

Physical activity is a vital component of children's lives and helps them to grow properly. Childhood obesity is the result of inadequate physical activity and excess food consumption. Teach children that exercise can be fun and that every little bit counts.

Here are some details on the stretches and exercises discussed previously. These are very simple exercises that were designed to be done in the classroom. Many different exercises may be done outside; consult the physical education teacher for more ideas.

- 🍷 **Flamingo stretch:** Students stand next to their desks with one hand resting on their desks. They bend one knee and pull that leg behind them, holding that position for 10 to 15 seconds. Remind them not to bounce or pull too tightly. Repeat with the other leg.
- 🍷 **Tree-limb stretch:** This exercise is for the arms. Students stretch their right arms in front of them. Then, using their left arms, they pull the right arm across their bodies. Hold for 10 to 15 seconds. Repeat with the other arm.
- 🍷 **Jumping jacks:** These exercises are done in the classroom with elbows bent (to avoid injury) rather than with arms fully extended.
- 🍷 **Desk push-ups:** The students stand facing their desks. Very carefully, they place the palms of both hands about 12 inches apart on the desk and slowly go down without bending the knees while they try to touch the chest to the desk. They come up and repeat the exercise ten times.
- 🍷 **Tiptoe heel raises:** The students stand next to their desks. With one hand on the desk for support, students rise up onto their toes. They slowly lower and repeat 10 times.





NAME: _____

DATE: _____

Handout 6-1

What Is My Pulse?

PULSE: the number of times that my heart beats in one minute

How many seconds are in one minute?

Activity	Number of Times My Heart Beats in 6 Seconds	Multiply by 10	My Pulse
Resting		$\times 10 =$	
Warm-up		$\times 10 =$	
Stretching		$\times 10 =$	
Aerobic Activity		$\times 10 =$	
Anaerobic Activity		$\times 10 =$	
Cooldown		$\times 10 =$	

Answer the questions by using the numbers on this chart.

Activity

When was my heart beating the slowest?

When was my heart beating the fastest?



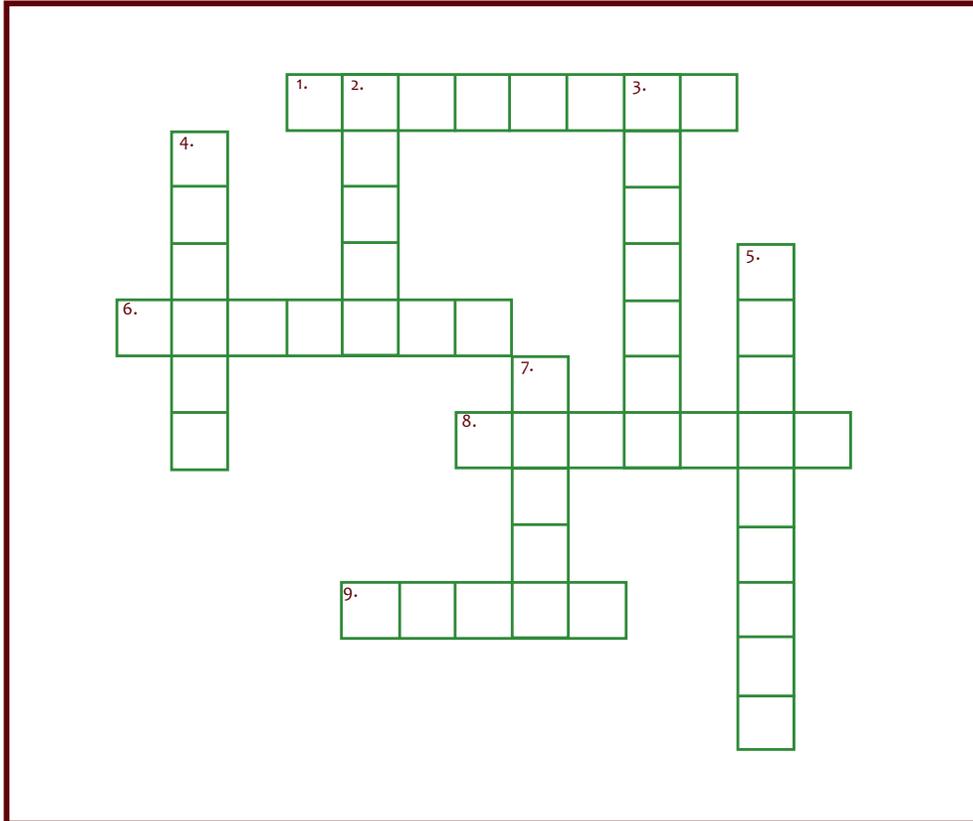


NAME: _____

DATE: _____

Handout 6-2

Physical Activity Crossword Puzzle



Across

1. A _____ activity is one that calls for the use of your body.
6. It is important to _____ your muscles before exercising so you don't get hurt.
8. The _____ in your body help you move and stay active.
9. It is very important to drink plenty of _____ before, during, and after exercise.

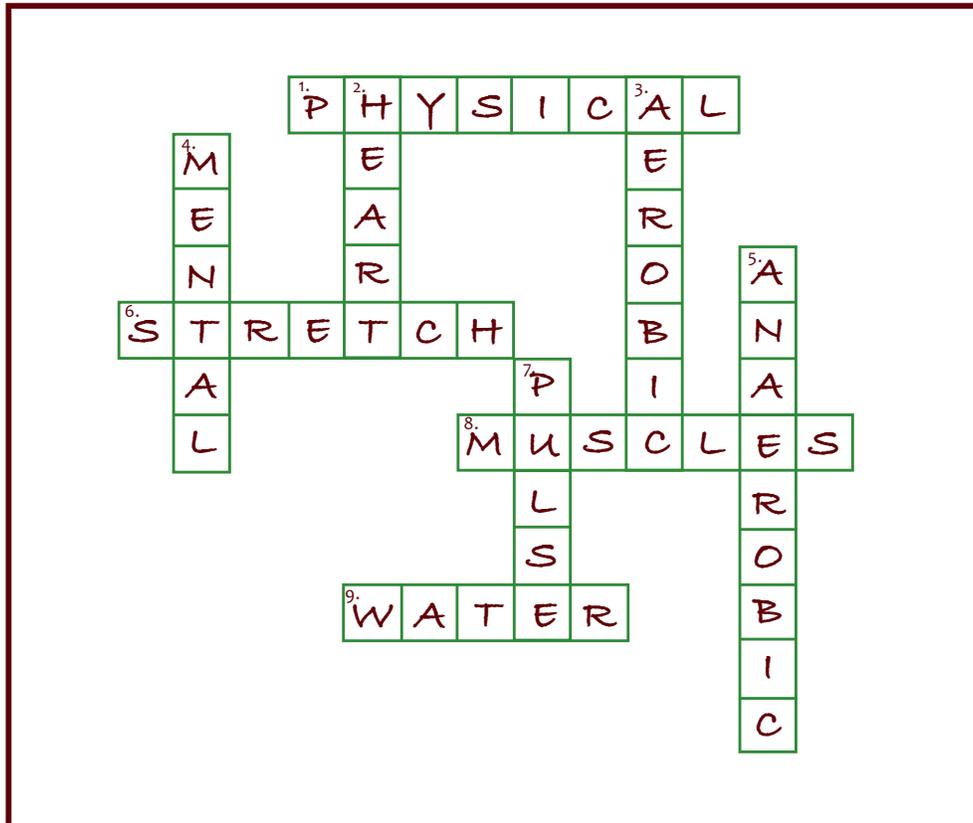
Down

2. The _____ is the most important muscle in your body.
3. Running makes you breathe faster and is a type of _____ exercise.
4. A _____ activity is one that calls for the use of your mind.
5. Lifting heavy garden tools is a type of _____ exercise that strengthens your muscles.
7. Your _____ tells how many times your heart beats in one minute.



Handout 6-2

Physical Activity Crossword Puzzle—Answer Key



Across

1. A **PHYSICAL** activity is one that calls for the use of your body.
6. It is important to **STRETCH** your muscles before exercising so you don't get hurt.
8. The **MUSCLES** in your body help you move and stay active.
9. It is very important to drink plenty of **WATER** before, during, and after exercise.

Down

2. The **HEART** is the most important muscle in your body.
3. Running makes you breathe faster and is a type of **AEROBIC** exercise.
4. A **MENTAL** activity is one that calls for the use of your mind.
5. Lifting heavy garden tools is a type of **ANAEROBIC** exercise that strengthens your muscles.
7. Your **PULSE** tells how many times your heart beats in one minute.



Be Active Your Way: A Fact Sheet for Adults

Finding out what kind and how much physical activity you need

How do I do it?

It's your choice. Pick an activity that's easy to fit into your life. Do at least 10 minutes of physical activity at a time. Choose aerobic activities that work for you. These make your heart beat faster and can make your heart, lungs, and blood vessels stronger and more fit. Also do strengthening activities which make your muscles do more work than usual.

Why should I be physically active?

Physical activity can make you feel stronger and more alive. It is a fun way to be with your family or friends. It also helps you improve your health.

How many times a week should I be physically active?

It is up to you, but it is better to spread your activity throughout the week and to be active at least 3 days a week.

How do I build up more physical activity?

Do a little more each time. Once you feel comfortable, do it more often. Then, you can trade activities at a moderate level for vigorous ones that take more effort. You can do moderate and vigorous activities in the same week.

How much physical activity do I need to do?

This chart tells you about the activities that are important for you to do. Do both aerobic activities and strengthening activities. Each offers important health benefits. And remember, some physical activity is better than none!

Aerobic Activities	Muscle Strengthening Activities
<p>If you choose activities at a moderate level, do at least 2 hours and 30 minutes a week.</p> <p>If you choose vigorous activities, do at least 1 hour and 15 minutes a week.</p>	<p>Do these at least 2 days a week.</p>
<ul style="list-style-type: none"> ♥ Slowly build up the amount of time you do physical activities. The more time you spend, the more health benefits you gain. Aim for twice the amount of activity in the box at left. ♥ Do at least 10 minutes at a time. ♥ You can combine moderate and vigorous activities. 	<ul style="list-style-type: none"> ♥ Include all the major muscle groups such as legs, hips, back, chest, stomach, shoulders, and arms. ♥ Exercises for each muscle group should be repeated 8 to 12 times per session.



How can I tell an activity at a moderate level from a vigorous one?

Vigorous activities take more effort than moderate ones. Here are just a few moderate and vigorous aerobic physical activities. Do these for 10 minutes or more at a time.

Moderate Activities (I can talk while I do them, but I can't sing.)	Vigorous Activities (I can only say a few words without stopping to catch my breath.)
<ul style="list-style-type: none"> ♥ Ballroom and line dancing ♥ Biking on level ground or with few hills ♥ Canoeing ♥ General gardening (raking, trimming shrubs) ♥ Sports where you catch and throw (baseball, softball, volleyball) ♥ Tennis (doubles) ♥ Using your manual wheelchair ♥ Using hand cyclers—also called ergometers ♥ Walking briskly ♥ Water aerobics 	<ul style="list-style-type: none"> ♥ Aerobic dance ♥ Biking faster than 10 miles per hour ♥ Fast dancing ♥ Heavy gardening (digging, hoeing) ♥ Hiking uphill ♥ Jumping rope ♥ Martial arts (such as karate) ♥ Race walking, jogging, or running ♥ Sports with a lot of running (basketball, hockey, soccer) ♥ Swimming fast or swimming laps ♥ Tennis (singles)

For more information, visit www.healthfinder.gov and type **activity** in the search box.

Be active **your way** by choosing activities you enjoy!

Source: <http://www.health.gov/paguidelines/factSheetAdults.aspx>





Manténgase activo a su manera: información para adultos

Cómo averiguar el tipo y la cantidad de actividad física que necesita

¿Cómo debo hacerlo?

Todo depende de usted. Elija una actividad que encaje fácilmente en su vida y dedíquele al menos 10 minutos en cada ocasión. Elija actividades **aeróbicas** que sean adecuadas para usted. Estas actividades hacen que su corazón lata más rápido y pueden fortalecer y hacer funcionar mejor el corazón, los pulmones y los vasos sanguíneos. Además, realice actividades de **fortalecimiento** que hagan que los músculos trabajen más que de costumbre.

¿Por qué me conviene mantenerme activo?

La actividad física puede hacerlo sentir más fuerte y más lleno de vida. Es una forma entretenida de pasar el tiempo con sus familiares o amigos. Además, mejora su salud.

¿Cuántas veces por semana debo realizar actividades físicas?

Depende de usted, pero lo mejor es distribuir la actividad a lo largo de toda la semana y realizarla al menos tres días por semana.

¿Cómo debo aumentar la actividad física?

Hágalo gradualmente. En cuanto se sienta cómodo, realice actividades físicas con más frecuencia. Luego, puede reemplazar las actividades moderadas por actividades intensas que requieran más esfuerzo. Puede realizar actividades moderadas y actividades intensas en la misma semana.

¿Cuánta actividad física tengo que realizar?

En este cuadro se mencionan las actividades importantes para usted. Realice **ambos** tipos de actividades: aeróbicas y de fortalecimiento. Cada una ofrece beneficios importantes para la salud. Y recuerde que algo de actividad física es mejor que nada.

Actividades aeróbicas

Si decide realizar actividades **moderadas**, dedíqueles por lo menos **2 horas y media** a la semana.

Si elige actividades **intensas**, dedíqueles al menos **1 hora y cuarto** a la semana.

- Aumente poco a poco la cantidad de tiempo que dedica a las actividades físicas. Entre más tiempo les dedique, más se beneficiará su salud. Propóngase realizar el doble de la actividad que se indica arriba.
- Realice la actividad por lo menos durante 10 minutos en cada ocasión.
- Puede combinar actividades moderadas e intensas.

Actividades para fortalecer los músculos

Realícelas al menos **dos días** a la semana.

- Ejercite todos los grupos musculares importantes: piernas, caderas, espalda, pecho, abdomen, hombros y brazos.
- Los ejercicios para cada grupo muscular deben repetirse entre 8 y 12 veces en cada sesión.

Manténgase activo, sano y feliz.



¿Cómo puedo distinguir una actividad moderada de una intensa?

Las actividades intensas requieren más esfuerzo que las moderadas. A continuación hay una lista de actividades físicas aeróbicas, tanto moderadas como intensas. Realícelas durante **10 minutos o más** en cada ocasión.

Actividades moderadas

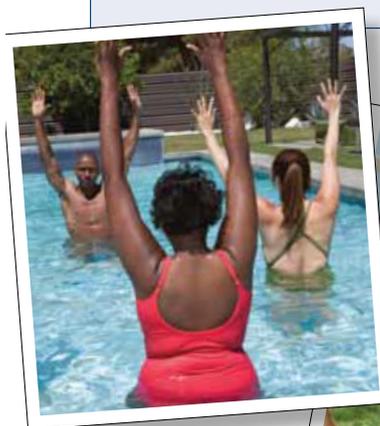
(Puede hablar mientras las realiza, pero no puede cantar).

- Practicar el baile o las danzas de grupo, como la salsa en rueda al estilo cubano
- Hacer ciclismo en terreno plano o ligeramente montañoso
- Remar en canoa
- Realizar labores generales de jardinería (rastrillar hojas, podar arbustos)
- Participar en deportes en los que se atrape y lance una bola (béisbol, voleibol, *softball*)
- Jugar al tenis por parejas (dobles)
- Usar una silla de ruedas manual en vez de una silla de ruedas automática
- Usar una bicicleta que se hace funcionar con las manos (llamada también ergómetro de brazos)
- Caminar a paso rápido
- Hacer aeróbicos acuáticos

Actividades intensas

(Solo puede decir unas pocas palabras sin perder el aliento).

- Practicar danzas aeróbicas
- Hacer ciclismo a más de 10 millas por hora (a más de 16 kilómetros por hora)
- Bailar al son de ritmos rápidos
- Realizar labores pesadas de jardinería (cavar, preparar la tierra con un azadón antes de sembrar)
- Practicar el montañismo
- Saltar a la cuerda
- Practicar artes marciales (como el karate)
- Practicar la marcha atlética, trotar o correr
- Participar en deportes en los que haya que correr mucho (basquetbol, fútbol, *hockey*)
- Nadar rápidamente o nadar de un extremo a otro de la piscina varias veces
- Jugar al tenis individual



Si desea obtener más información, visite el sitio web <http://www.healthfinder.gov/espanol/> y escriba "actividad física" en la casilla de búsqueda.

Manténgase activo a su manera con actividades que le gusten.

make better beverage choices



10 tips to get started

What you drink is as important as what you eat. Many beverages contain added sugars and offer little or no nutrients, while others may provide nutrients but too much fat and too many calories. Here are some tips to help you make better beverage choices.

1 drink water

Drink water instead of sugary drinks when you're thirsty. Regular soda, energy or sports drinks, and other sweet drinks usually contain a lot of added sugar, which provides more calories than needed. To maintain a healthy weight, sip water or other drinks with few or no calories.



2 how much water is enough?

Let your thirst be your guide. Water is an important nutrient for the body, but everyone's needs are different. Most of us get enough water from the foods we eat and the beverages we drink. A healthy body can balance water needs throughout the day. Drink plenty of water if you are very active, live or work in hot conditions, or are an older adult.

3 a thrifty option

Water is usually easy on the wallet. You can save money by drinking water from the tap at home or when eating out.

4 manage your calories

Drink water with and between your meals. Adults and children take in about 400 calories per day as beverages—drinking water can help you manage your calories.

5 kid-friendly drink zone

Make water, low-fat or fat-free milk, or 100% juice an easy option in your home. Have ready-to-go containers filled with water or healthy drinks available in the refrigerator. Place them in lunch boxes or backpacks for easy access when kids are away from home. Depending on age, children can drink ½ to 1 cup, and adults can drink up to 1 cup of 100% fruit or vegetable juice* each day.



*100% juice is part of the Fruit or Vegetable Group. Juice should make up half or less of total recommended fruit or vegetable intake.

6 don't forget your dairy**

When you choose milk or milk alternatives, select low-fat or fat-free milk or fortified soymilk. Each type of milk offers the same key nutrients such as calcium, vitamin D, and potassium, but the number of calories are very different. Older children, teens, and adults need 3 cups of milk per day, while children 4 to 8 years old need 2½ cups and children 2 to 3 years old need 2 cups.



7 enjoy your beverage

When water just won't do—enjoy the beverage of your choice, but just cut back. Remember to check the serving size and the number of servings in the can, bottle, or container to stay within calorie needs. Select smaller cans, cups, or glasses instead of large or supersized options.

8 water on the go

Water is always convenient. Fill a clean, reusable water bottle and toss it in your bag or brief case to quench your thirst throughout the day. Reusable bottles are also easy on the environment.



9 check the facts

Use the Nutrition Facts label to choose beverages at the grocery store. The label contains information about total sugars, fats, and calories to help you make better choices.

10 compare what you drink

Food-A-Pedia, an online feature available at ChooseMyPlate.gov/SuperTracker, can help you compare calories, added sugars, and fats in your favorite beverages.

** Milk is a part of the Dairy Group. A cup = 1 cup of milk or yogurt, 1½ ounces of natural cheese, or 2 ounces of processed cheese.

10 consejos Serie de educación en nutrición

seleccione sus bebidas saludablemente



10 consejos para empezar

Lo que bebes es tan importante como lo que comes. Muchas bebidas contienen azúcar y ofrecen pocos o casi ningún nutriente, mientras que otras contienen nutrientes pero mucha grasa y también muchas calorías. Aquí presentamos algunos consejos para ayudarte a seleccionar mejor tus bebidas.

1 bebe agua

Cuando tengas sed, bebe agua en vez de bebidas azucaradas. Las gaseosas o refrescos, bebidas energéticas y otras bebidas azucaradas contienen mucha azúcar, estas bebidas contienen más calorías de las que necesitas. Para mantener un peso saludable bebe agua u otras bebidas sin o con pocas calorías.



2 cuánta agua es suficiente?

Deja que tu sed te guíe. El agua es un nutriente importante para el cuerpo, pero cada uno tiene necesidades diferentes. Muchos de nosotros adquirimos agua suficiente de los alimentos y las bebidas que consumimos. Un cuerpo saludable puede balancear los requerimientos de agua. Bebe abundante agua si eres muy activo, si vives o trabajas en condiciones calurosas, o si eres de la tercera edad.

3 una opción barata

El agua es usualmente barata. Puedes ahorrar dinero tomando agua potable de la casa o cuando vas a comer fuera.

4 maneje sus calorías

Beba agua con las comidas y entre las comidas. Los adultos y los niños beben cerca de 400 calorías por día, beber agua podría ayudarte a manejar tus calorías.

5 zona de bebidas para niños

Haz que el agua, la leche sin o baja en grasa, o los jugos 100% de frutas sean una opción fácil en casa. Prepara y ten listos en el refrigerador botellas de agua o bebidas saludables para cuando salgas de casa, guárdalos en las mochilas o las loncheras de los niños. Dependiendo de la edad, los niños pueden beber de ½ a 1 taza de jugo* 100% de frutas o vegetales al día y los adultos pueden beber hasta una taza.



*Jugo 100% es parte del grupo de las frutas y vegetales. Los jugos deben constituir la mitad o menos de la recomendación para el grupo de frutas y vegetales.

6 no olvides tu leche**

Cuando tomes leche u otras bebidas alternativas, selecciona leche sin o baja en grasa, o leche de soya fortificada. Cada tipo de leche ofrece la misma cantidad de nutrientes como calcio, vitamina D, y potasio, pero el número de calorías varía. Los niños mayores, adolescentes y adultos necesitan 3 tazas de leche por día, los niños de 4 a 8 años de edad 2½ tazas y los niños de 2 a 3 años 2 tazas.



7 disfruta tu bebida

Cuando no desees agua, disfruta tu bebida favorita pero en pocas cantidades. Recuerda chequear el número de porciones en la etiqueta de la lata, botella o vaso para mantener las calorías que necesitas. Selecciona envases pequeños en vez de los grandes.



8 agua para el camino

El agua es siempre conveniente. Llena una botella reusable limpia con agua y ponla en tu bolsa para cuando estés sediento. Las botellas reusable también protegen el medio ambiente.

9 chequea la información de la etiqueta

La etiqueta contiene información nutricional sobre la cantidad total de azúcares, grasas y calorías, úsalas para escoger mejor tus bebidas.

10 compara los nutrientes de tus bebidas

Food-A-Pedia, es una opción disponible online en ChooseMyPlate.gov/SuperTracker, para ayudarte a comparar las calorías, azúcares y grasas de tus bebidas favoritas. (Food-a-pedia y SuperTracker están disponibles sólo en inglés.)

**La leche es parte del grupo de los lácteos. Una taza = 1 taza de leche o yogur, 1½ onza de queso natural, o 2 onzas de queso procesado.



Family Activity

Directions: Find all of the words listed on the right in the puzzle below. They are hidden across, down, and diagonally. Good luck!

P	Q	W	D	F	G	Y	B	I	O	P	L	Z	N	V	H
M	H	E	A	R	T	M	U	S	C	L	E	G	D	S	W
A	X	Y	V	L	B	N	U	T	R	I	E	N	T	S	M
G	P	O	S	Q	N	Y	K	J	D	F	M	E	S	L	E
J	U	M	P	I	N	G	J	A	C	K	S	D	S	A	N
D	L	A	C	R	C	H	P	O	I	U	Y	G	F	D	T
W	S	H	K	A	G	A	R	D	E	N	I	N	G	N	A
J	E	E	C	X	M	N	L	V	D	S	W	E	R	T	L
L	E	A	R	N	I	N	G	A	D	Y	H	J	O	A	A
X	C	L	B	H	M	S	F	C	C	V	T	N	G	S	C
D	E	T	I	K	E	T	I	R	E	T	H	I	L	W	T
F	Y	H	R	J	H	B	S	C	D	F	I	B	K	Q	I
J	E	T	K	B	O	N	L	E	M	E	N	V	X	P	V
K	A	C	F	R	I	W	A	T	E	R	K	O	I	E	I
O	M	T	E	J	P	E	H	G	D	R	I	A	N	T	T
A	Y	A	R	J	K	L	U	P	W	A	N	B	T	U	Y
B	O	A	N	A	E	R	O	B	I	C	G	Z	M	K	I

Physical activity

Mental activity

Jumping jacks

Gardening

Thinking

Learning

Health

Heart muscle

Pulse

Aerobic

Anaerobic

Nutrients

Water

Parents: Ask your child what some of these words mean. Students learned about them in class!

Water and Physical Activity Log

For the next few days, keep track of how often you drink water and are physically active. Remember to warm up, stretch, and drink plenty of water before you begin your activity!

Give yourself a star * each time you drink water or are active.

	Monday	Tuesday	Wednesday	Thursday	Friday
Number of times I drank water today					
Number of times I was active today					



Lesson 7

Goal Setting

OBJECTIVES

- 🍌 To learn how to incorporate some of the dietary guidelines into daily activities
- 🍌 To learn how to set and reach reasonable goals
- 🍌 To learn about seed-dispersal mechanisms and create a new variety of seeds

APPLICABLE CONTENT STANDARDS

- 🍌 English–language arts
- 🍌 Mathematics
- 🍌 Science

(See the matrix in Appendix B.)

Materials for In-class Lesson and Activities	Materials for Gardening Activity
<p>Handouts:</p> <ul style="list-style-type: none"> 7-1 Fruits and Vegetables at Hand 7-2 Become More Physically Active 7-3 Setting Goals “10 tips” <p>MyPlate poster Small bag of potato chips Small bag of pretzels Paper napkins or a paper bag Star stickers (optional)</p>	<p>Handouts:</p> <ul style="list-style-type: none"> 7-4 My Seed <p>Craft items:</p> <ul style="list-style-type: none"> - pipe cleaners - yarn or ribbon - small cotton puff balls - paper clips - glue - thin wire - rice grains - toothpicks - beads

Preparation for In-class Lesson and Activities	Preparation for Gardening Activity
<p>Day before the lesson:</p> <p>Photocopy handouts 7-1, 7-2, 7-3, and the “10 tips.” Gather materials.</p>	<p>Day before the lesson:</p> <p>Photocopy handout 7-4. Gather materials.</p>
<p>Just before the lesson:</p> <p>Display the MyPlate poster at the front of the room. Have students take out their nutrition folders.</p>	



Nutrition Lesson Activities

(60 min.)

1. Review of lesson 6

- 🍌 Last time we talked about physical activity. In addition to eating healthy foods, it is also important for us to be active.

Why is it important for us to be physically active? *(To keep us healthy, to keep our muscles strong—especially our hearts)*

- 🍌 Let's measure our pulse. Is everyone relaxed? (Resting pulse should be around 80 beats per minute.)

2. Dietary Guidelines for Americans

- 🍌 Remember how government agencies came up with MyPlate and the Nutrition Facts food labels to help us better understand the food groups and the nutrients that are in our foods? Well, they have also come up with several guidelines to help us remember all the things we have talked about so far in our lessons.

- 🍌 What does the term *guidelines* mean? *(They are not rules but rather a set of goals we should strive to achieve.)*

There are several dietary guidelines, but we are going to break them down into four goals for this lesson:

(Go through each guideline one at a time, using the information provided below, and discuss a reasonable goal to achieve each one.)

Follow MyPlate and eat a variety of foods for breakfast, lunch, and dinner.

- 🍌 What does it mean to eat a “variety” of foods?

- 💧 *Eat foods from each of the food groups.*
- 💧 *Eat many different foods within each food group.*
- 💧 *Eat different parts of the plant.*
- 💧 *Eat foods of different colors.*

- 🍌 We can use MyPlate as a tool to help us meet this goal. Using the MyPlate poster, review the food groups and recommended amounts of food for each group.

GOAL: *Choose foods from at least three different food groups for each meal.*

Breakfast. Try to eat from three different food groups.

Why is it important to eat breakfast?

(It provides fuel for the brain, which is especially important on school days.)

Lunch. Try to eat from four different food groups.

Dinner. Try to eat from five different food groups.





🍌 How can we do this?

Objective: To fill in a blank MyPlate with foods that we can try to eat at each meal

Draw a circle on the board and fill it in as a class. Have one student name foods from three different food groups that he could eat for breakfast. Have another student name foods she could eat for lunch from four different food groups. Have other students name foods they could eat for dinner from five different food groups. Any snacks to add variety? (Make sure you cover all the food groups.) Can you get enough servings from each food group? (To do this, students will probably need to include vegetables as snacks.)

Make half of your plate fruits and vegetables.

Why eat 4 cups of fruits and vegetables every day?

- 💧 They contain many nutrients that we need to stay healthy.
- 💧 They can be grown in the school garden.

Eat 1 1/2 cups of fruits and 2 1/2 cups of vegetables each day. One serving equals one medium piece of fruit, 3/4 cup fruit juice, 1/2 cup cut-up fruit, or 1/4 cup dried fruit.

GOAL: Try to eat at least one fruit or vegetable at each meal. (This is the first step toward making half your plate fruits and vegetables.)

🍌 How can we do this?

Objective: To have the students identify at least five fruits and vegetables that they like to eat

Distribute the Fruits and Vegetables at Hand handout (7-1). Have the students trace their hands onto the paper. Inside each finger they should write the name of a fruit or vegetable they like. They should make sure to include at least two fruits and two vegetables.

Choose snacks that are low in fat.

🍌 How can we compare foods? Here are two methods:

- a. Read food labels and compare two foods (e.g., potato chips and pretzels).

What % Daily Value of total fat is in the pretzels? In the chips? Which would you choose for a low-fat snack? (pretzels)

- b. Use the paper napkin trick.

Put potato chips and pretzels on separate paper napkins and gently crush them. The chips will leave an oil stain on the napkin when removed. Pretzels, however, leave no oil stain because any moisture is from the water, which will have evaporated.

Which would you choose for a low-fat snack? (pretzels)

🍌 Brainstorm to think of other snack foods that are high or low in fat.

🍌 Should we eliminate all fat from our diets?

(No, because our bodies do need some fat. We should just try to eat it in moderation.)

GOAL: Choose at least one low-fat snack every day.



How can we do this?

Objective: To provide the students with low-fat snack alternatives

Have the students mention low-fat snack choices. Write these on newsprint for display around the classroom. This will give the students ideas for healthful snacks.

Be physically active every day.

Choose active rather than inactive games to play. Brainstorm about physical activities that the children like to do.

(Gardening, basketball, gymnastics, swimming, dancing, running)

Drink plenty of water daily.

GOAL: *Be physically active for at least 30 minutes every day outside school. Drink an extra glass of water each day.*

How can we do this?

Objective: To distinguish between being physically active and physically inactive and to identify physically active things that the students like to do.

Have the students complete the Become More Physically Active handout (7-2).

3. Review activity

Goal Sheet: Explain the Setting Goals handout (7-3). Have the students keep track of their progress toward their goals each day for the next four days. Have the class fill in the chart with the days of the week. Assign Day 1 to the day before the lesson was taught. (If possible, try to include a weekend. Most people's habits on a weekend are slightly different from those on a weekday.) There is a blank box at the bottom of the handout for the students to fill in their own individual goal.

Help the students complete the chart for Day 1. Slowly read through each goal and ask the students to remember whether they met that goal the day before. Students can give themselves a star for each goal they achieve. Have the students take a few minutes every morning for the next few days to complete the charts. Make sure the students realize that this is an individual activity (they will be the only ones looking at it) and that there are no right or wrong answers.

Once the students have completed the goal sheet, have them chart the number of goals they met each day. This activity may also be done as a class. Make sure those students who did not meet as many goals still feel successful. Students could collect, organize, display, and interpret the data. Have them draw conclusions about whether they met their dietary goals.



Gardening Activity

(30 min.)

Just as we have goals, plants have their own ways of promoting a 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 schoolyard and collect seeds from local plants. Here are some ideas about dispersal methods:

- Smaller, lighter seeds may fly through the air to a new location (e.g., dandelions).
- Pointy seeds may get stuck in an animal's fur and travel with the animal to a new location (e.g., burr).
- 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).
- Some seeds may be hollow with a tough outer shell allowing them to float on water (e.g., coconut).

Have the students invent their own seed variety. Have them draw a picture of what their seed would look like by using the My Seed handout (7-4). Encourage them to think about how their seed will travel to a new location and become a new plant. Is the seed light or heavy, large or small, pointy or smooth? Why?

Last, provide the students with a variety of craft materials and let them make a three-dimensional model of their seed. Encourage creativity. And encourage the students to share their model with their classmates by explaining why and how their seed will travel.

(The idea for this activity was provided by Mary Shaw, Solano County Master Gardener, University of California Cooperative Extension.)

Additional Activities

1. Provide a fruit or vegetable snack to help students meet the 5 cups a day goal. This activity can also help them meet the goal of eating a low-fat snack.
2. Have students write on a blank MyPlate after lunch what they ate for breakfast and lunch. Encourage them to think of foods that they could eat as snacks or for dinner to make sure they are eating from all the food groups.
3. Have the students write in their journals about their experience after they have completed the Setting Goals handout (7-3). What did they learn from the activity? Is it something they think they will be able to continue doing without the goal sheet?
4. Take some time to discuss with the students some obstacles they may meet while trying to reach all these goals. Have the class try to think of ways to overcome those obstacles. If several obstacles are mentioned, divide the class into different "task forces" and have each group come up with a solution.



5. Take the students through some guided imagery. Have them close their eyes and pretend that they just came home from school. They are hungry and are looking for a snack. Have them imagine their own kitchen and where all the different foods are. What would be their first snack choice? Is this a healthful choice? Is there a more healthful choice? Have the students imagine putting down the first snack choice and looking around for a second. Imagine eating the more healthful snack choice. Remind the students before they leave school to think about this when they get home and head for that snack.
6. Compare the fat content of snack items that are familiar to the students. Encourage the students to think of low-fat substitutions.
7. Have students keep track of their family's fruit and vegetable consumption.
8. Ask a member of the cafeteria staff to talk to the class about what is being done in the kitchen to provide healthful foods.
9. Arrange for the class to go on a tour of a farmers market or supermarket to learn more about fruits and vegetables. (See Appendix D for a Web site that features locations of farmers markets in your area.)
10. Have the students look more closely at some of the crops being grown in their county. Find out when those plants first started growing in that area. Where were the crops seen before? Speculate about how the seeds may have traveled to new and faraway places due to the size and shape of the seed.

Background Information

Make sure the goals set are realistic and desirable. Some students may take longer to reach the same goals that other students are already achieving. Most of these goals can be met only over the course of two to three days. Therefore, students may find it difficult to meet all the goals every day. Encourage them to set different goals on different days to make them more attainable.

The *Dietary Guidelines for Americans*, 2010, contains the following recommendations:

Build a healthy plate

Before you eat, think about what goes on your plate or in your cup or bowl. Foods such as vegetables, fruits, whole grains, low-fat dairy products, and lean protein foods contain the nutrients you need without too many calories. Try some of these options.

- Make half your plate fruits and vegetables.
- Switch to skim or 1% milk.
- Make at least half your grains whole.
- Vary your protein food choices.
- Keep your food safe to eat (learn more at <http://www.FoodSafety.gov>).





Cut back on foods high in solid fats, added sugars, and salt

Many people eat foods with too much solid fats, added sugars, and salt (sodium). Added sugars and fats load foods with extra calories you do not need. Too much sodium may increase your blood pressure.

- Choose foods and drinks with little or no added sugars.
- Look out for salt (sodium) in foods you buy—it all adds up.
- Eat fewer foods that are high in solid fats.

Eat the right amount of calories for you

Everyone has a personal calorie limit. Staying within yours can help you get to or maintain a healthy weight. People who are successful at managing their weight have found ways to keep track of how much they eat in a day, even if they do not count every calorie.

- Enjoy your food, but eat less.
- Cook more often at home, where you are in control of what is in your food.
- When eating out, choose lower-calorie menu options.
- Write down what you eat to keep track of how much you eat.

Be physically active your way

Pick activities that you like and start by doing what you, at least 10 minutes at a time. Every bit adds up, and the health benefits increase as you spend more time being active.

Note to parents: What you eat and drink and your level of physical activity are important for your own health and also for your children's health.

You are your children's more important role model. Your children pay attention to what you do more than what you say.

You can do a lot to help your children develop healthy habits for life by providing and eating healthy meals and snacks. For example, don't just tell your children to eat their vegetables—show them that you eat and enjoy vegetables every day.

<http://www.choosemyplate.gov/print-materials-ordering/dietary-guidelines.html>



NAME: _____

DATE: _____

Handout 7-1

Fruits and Vegetables at Hand

Directions: Trace your hand in the space provided below. Inside each finger write one of your favorite fruits or vegetables. Think of at least two fruits and two vegetables. You may choose either a fruit or a vegetable for the fifth finger.





NAME: _____

DATE: _____

Handout 7-2

Become More Physically Active

Directions: For each pair, circle the action that is more physically active.

- | | | |
|------------------------------|----|------------------------------|
| 1. Watch TV | OR | work in the garden |
| 2. Walk the dog | OR | play video games |
| 3. Play soccer | OR | take a nap |
| 4. Ride in a car | OR | ride a bike |
| 5. Play outside with friends | OR | talk on the phone to friends |

My Favorite Activities

To stay healthy, I need to be physically active for at least 30 minutes every day. Here are some of my favorite activities that I could do:

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

(Draw on the back of this sheet a picture of a favorite physical activity.)

**Goal: I will try to do one activity from this list every day.
(Don't forget to drink water!)**

NAME:

DATE:

Handout 7-3

Setting Goals

Directions: Give yourself a star each time you meet one of your goals for the next four days. Then add the number of goals you met each day and write it in the box at the bottom. Try to meet more of your goals each day.

GOAL	Day 1	Day 2	Day 3	Day 4
I ate from all of the food groups.				
I ate a fruit or vegetable at every meal.				
I chose a low-fat snack.				
I was physically active.				
I drank an extra glass of water.				
NUMBER OF GOALS I MET EACH DAY				



NAME: _____

DATE: _____

Handout 7-4

My Seed

How will your seed travel from one location to another?

Will your seed be big or small? Heavy or light?

What is special about your seed?

Directions: Invent your very own seed! Draw a picture of what it would look like in the space provided below. Use your answers to the questions to help you design your seed.

10 tips

Nutrition Education Series

use SuperTracker your way



10 tips to get started

SuperTracker is an online tool where you can get a personalized nutrition and activity plan. Track what you eat and your activities to see how they stack up, and get tips and support to help you make healthy choices.

1 create a profile

Enter information about yourself on the **Create Profile** page to get a personal calorie limit and food plan; register to save your data and access it any time.



2 compare foods

Check out **Food-A-Pedia** to look up nutrition info for over 8,000 foods and compare foods side by side.

3 get your plan

View **My Plan** to see your daily food group targets—what and how much to eat within your calorie allowance.

4 track your foods and activities

Use **Food Tracker** and **Physical Activity Tracker** to search from a database of over 8,000 foods and nearly 800 physical activities to see how your daily choices stack up against your plan; save favorites and copy for easy entry.



5 build a combo

Try **My Combo** to link and save foods that you typically eat together, so you can add them to meals with one click.

6 run a report

Go to **My Reports** to measure progress; choose from six reports that range from a simple meal summary to an indepth analysis of food group and nutrient intakes over time.



7 set a goal

Explore **My Top 5 Goals** to choose up to five personal goals that you want to achieve. Sign up for **My Coach Center** to get tips and support as you work toward your goals.



8 track your weight

Visit **My Weight Manager** to enter your weight and track progress over time; compare your weight history to trends in your calorie intake and physical activity.



9 record a journal entry

Use **My Journal** to record daily events; identify triggers that may be associated with changes in your health behaviors and weight.

10 refer a friend!

Tell your friends and family about **SuperTracker**; help them get started today.

10 consejos Serie de educación en nutrición

use SuperTracker a su manera



10 consejos para empezar

SuperTracker es una herramienta en internet donde se puede obtener un plan personalizado de actividades y nutrición. Establezca el recor de lo que come y de sus actividades para ver cómo se integran, y obtenga consejos y apoyo para ayudar a tomar decisiones saludables. El “SuperTracker está disponible sólo en inglés.

1 cree un perfil

Introduzca información acerca de usted en la página “Create Profile” para obtener un plan personal de alimentos y su límite de calorías; regístrese para guardar sus datos y tener acceso en cualquier momento.

2 compare alimentos

Consulte “Food-A-Pedia” para buscar información de nutrición de más de 8,000 alimentos y compárelos unos con otros.



3 obtenga su plan

En “My Plan” podrá ver sus metas diarias para cada grupo de alimentos; qué y cuánto debe comer dentro de las calorías que tiene asignadas.

4 realice un seguimiento de sus actividades y alimentos

Use el “Food Tracker” y el “Physical Activity Tracker” para buscar en una base de datos de más de 8,000 alimentos y casi 800 actividades físicas y vea cómo sus opciones diarias se integran con respecto a su plan; guarde sus favoritos y copie para una entrada fácil.



5 construya un combo

Ensaye “My Combo” para enlazar y guardar alimentos que suele comer juntos, de manera que pueda agregarlos a las comidas con un solo clic.

6 ejecute un informe

Vaya a “My Report” para medir el progreso; elija entre seis informes que van desde un simple resumen de comida a un análisis profundo del grupo de alimentos y nutrientes ingeridos en un tiempo determinado.



7 establezca una meta

Explore “My Top 5 Goals” para elegir hasta cinco metas personales que desee lograr. Regístrese en “My Coach Center” para obtener consejos y apoyo mientras trabaja para lograr sus objetivos.



8 haga un seguimiento de su peso

Visite “My Weight Manager” para introducir su peso y hacer un seguimiento en el tiempo; compare su historia de peso con sus tendencias en el consumo de calorías y la actividad física.



9 lleve un diario

Use “My Journal” para registrar eventos diarios; identifique los cambios en su cuerpo o comportamientos que pudieran estar asociados con cambios en su salud o peso.

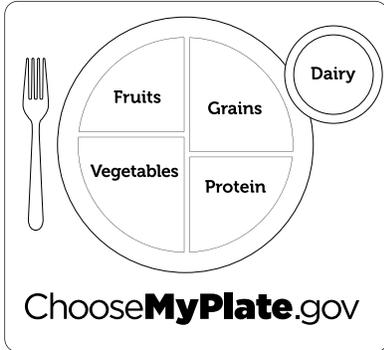
10 remita a un amigo

Informe a sus amigos y familiares sobre “SuperTracker”; ayúdeles a empezar hoy.



Family Activity

Here are some activities to help you remember the four goals.



Goal #1

How much should we try to eat from each food group? Write that number on MyPlate on the left. (You can find the answers in handout 4-2.)

Color in the food groups that you have eaten from today.

Goal #2

On the lines below, list five of your family's favorite fruits and vegetables. See if you can eat at least one serving of these five foods each day to meet your goal. Listed below are some examples for each meal.

LUNCH

carrots
apple
juice

BREAKFAST

Bananas
strawberries

DINNER

Green salad, corn, oranges

Goal #3

List some of your favorite low-fat snacks. Try choosing one of these after school instead of cookies or candy. Remember to read food labels to determine whether the food is low in fat.

Goal #4

Have you been physically active for at least 20 minutes today? What did you do?

If you were not active today, plan now what you are going to do tomorrow.
Don't forget to drink water!



Lesson 8

Consumerism

OBJECTIVES

- 🍌 To learn about the techniques used by companies to sell their products
- 🍌 To learn how advertisements influence our food choices
- 🍌 To create an ad for a fresh fruit or vegetable
- 🍌 To learn about butterflies and create a handcrafted butterfly

APPLICABLE CONTENT STANDARDS

- 🍌 English–language arts
- 🍌 Science

(See the matrix in Appendix B.)

Materials for In-class Lesson and Activities	Materials for Gardening Activity
<p>Handouts:</p> <ul style="list-style-type: none"> 8-1 How Companies Advertise 8-2 Eat My Food “10 tips” <p>Magazine advertisements of foods (Have students bring in their own ads.)</p> <p>Fresh Fruit and Vegetable Photo Cards (See Appendix D under California Department of Education for ordering information.)</p> <p>Masking tape</p>	<p>For one butterfly:</p> <ul style="list-style-type: none"> 1 old-fashioned wooden clothespin (no spring), painted sparkle green, if desired 2 green or black pipe cleaners, cut in half 2 pieces of colored cellophane or crepe paper, cut into 4-inch squares Plastic google eyes or small pom-poms for eyes Stamens from silk flowers or two small pieces of stiff thread or yarn (antennae) Glue gun (for older children) or bottles of tacky glue (for younger children)
Preparation for In-class Lesson and Activities	Preparation for Gardening Activity
<p>Day before the lesson:</p> <ul style="list-style-type: none"> Photocopy handouts 8-1, 8-2, and “10 tips.” Cut out advertisements of food or ask students to get their own. Gather materials. <p>Just before the lesson:</p> <ul style="list-style-type: none"> Have students take out their nutrition folders. 	<p>Day before the lesson:</p> <ul style="list-style-type: none"> Gather enough materials for one butterfly per student. Cut pipe cleaners and cellophane or crepe paper (if necessary).



Nutrition Lesson Activities

(60 min.)

1. Review of lesson 7

- Follow MyPlate and eat a variety of foods for breakfast, lunch, and dinner.
- Make half of your plate fruits and vegetables.
- Choose low-fat snacks.
- Be physically active every day.
- Have students give examples of how they can meet each goal.
In general, these are goals that we should try to meet every day in order to grow and live a healthy life.
- Spend a few moments going over the goal sheets from lesson 7 if you have not already done so.

2. Introduction to consumerism

- Today, we are going to take a closer look at something that influences what we eat and when we eat it: advertisements.
- Some advertising facts:**
Approximately \$464 billion was spent on advertising in the United States in 2011, according to Zenith Optimedia. Most of the food advertised in commercials is directed at kids and shows foods high in sugar.
- Where do we see advertisements for food products and restaurants?
TV, grocery stores, magazines, newspapers, fliers mailed to our homes, radio, the Internet
- What do companies do to encourage you to buy/eat their food? (Ask students for examples of sales techniques.)
They use catchy slogans/phrases, make health claims, use bright colors, employ celebrities as spokespersons, or give away toys or prizes.
- Have advertisements ever influenced your food choices? When? How?

3. Advertisement activity

- Objective:** Students take a closer look at some magazine ads and become aware of different tactics that food companies use to sell their products.
- Procedures:**
 - Go over one example of an ad with the class prior to handing out materials. Discuss the questions on the How Companies Advertise handout (8-1) while showing one full-page ad.
 - Distribute one food ad to each student.
 - Distribute the How Companies Advertise handout (8-1).
 - Have students complete the handout. (There are no right or wrong answers.)





- **Wrap-up:** Reassemble as a class and discuss some of the findings. Have a few students hold up the ad that they worked on and go through some of the questions.
- Are all foods that are advertised good for you? How do you know?
Remember, there are no good foods or bad foods; some choices are just better for your body. Just because a food is advertised does not mean that it is the “best” food that you can eat (even though the company that made the ad may think so). So we have to become educated consumers by reading labels and talking with our parents, teachers, cafeteria staff, and others.

4. Garden connection discussion

- Just as companies advertise their products so that we will purchase them, plants “advertise” themselves.
- Why do you think plants need to “advertise”? To whom?
Plants “advertise” to insects and animals to aid in pollination and later to spread seeds.
- Think about your favorite fruit or vegetable. What is it about the fruit or vegetable that makes you want to eat it?
The color, scent, taste, or flowers make you want to eat it. (Some of these attributes may actually be similar to the ones that large companies feature to advertise their products.)

5. Review activity

- a. Tell the students: Once you finish school, you can choose advertising as a career. Today everyone is going to get a chance to create his or her own ad for a fresh fruit or vegetable. Pretend you are creating an ad to be placed in your favorite magazine or Web site.
- b. Go through one example by using a Fresh Fruit and Vegetable Photo Card and asking the questions on the Eat My Food handout (8-2). Other questions to think about are as follows: How does the product taste? How does it look? What part of the plant does it come from? Can you think of a catchy phrase?
- c. Students can use the Fresh Fruit and Vegetable Photo Cards to help them complete the Eat My Food handout (8-2). Have students answer the questions and then create their own ad as a small-group or individual activity. The objective is for them to create an ad that might be placed in a magazine or Web site. The ad should make people want to eat the fruit or vegetable.
- d. Have a few students share their ads at the end of the class. Display ads around the room until the next lesson. *Optional:* Have students redraw their ads onto poster board to be displayed in the cafeteria.



Gardening Activity

(30 min.)

Companies use various tactics to attract attention to their products. Plants have a similar relationship with insects. Certain plants attract insects to aid in the process of pollination. The way in which plants attract butterflies is an excellent example. Butterflies are attracted to flowers and trees with nectar-filled blossoms. While a butterfly sucks nectar from a blossom with its proboscis (similar to a straw at the end of its nose), its legs come into contact with pollen. When the butterfly moves on to another blossom to feed on, the pollen also comes into contact with the next plant. This helps to propagate the plant species. Each species of butterfly is attracted to particular attributes of plants: their color, the taste of the nectar, and so on. If a plant were unable to attract the “business” of a butterfly or any other creature, it might not be successfully pollinated. Consequently, that particular plant might slowly die off and become extinct.

In addition, some butterflies must hide their attractions (i.e., do “anti-advertising”) to survive. Several predators, such as birds, like to eat butterflies. The color of a butterfly’s wing may resemble something poisonous or that does not taste good to drive away potential predators.

Additional information about butterflies may be found at various web sites or in a variety of books. Some good web sites include the following:

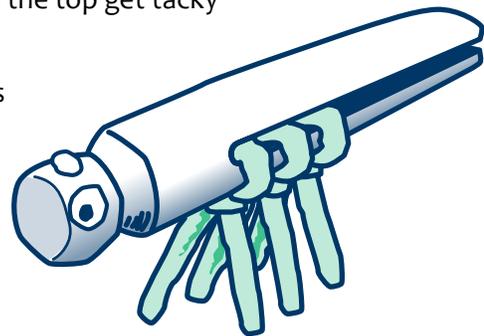
<http://www.usgs.gov> (Use the search word *butterflies*.)

<http://library.thinkquest.org> (This site will provide students with a variety of activities related to butterflies.)

The students will now get a chance to create their own beautiful butterflies! Once students complete their project, they can show off their creations by hanging them in the window or taking them out to the garden to “fly” from one plant to another to aid in the pollination process. Some flowers may be just beginning to bloom.

Directions

1. Start by holding the clothespin on its side. Wrap three pipe cleaners around the middle section one at a time, twisting them twice under the body. These become the butterfly’s six legs.
2. Now place a drop of glue on either side of the head and a drop on the top of the head. Glue one eye on each side of the head. Let the glue on the top get tacky (sticky). Go to the next step while it dries.
3. If students work carefully, they can draw on the wings to make their butterflies unique. Have them look outside at butterflies or in a book to get ideas of color combinations and patterns. Make the wings by gathering up two points from opposite ends of the cellophane or crepe paper square, meeting in the center. Carefully twist the paper to avoid ripping it. Repeat with the second square. Place the two wings

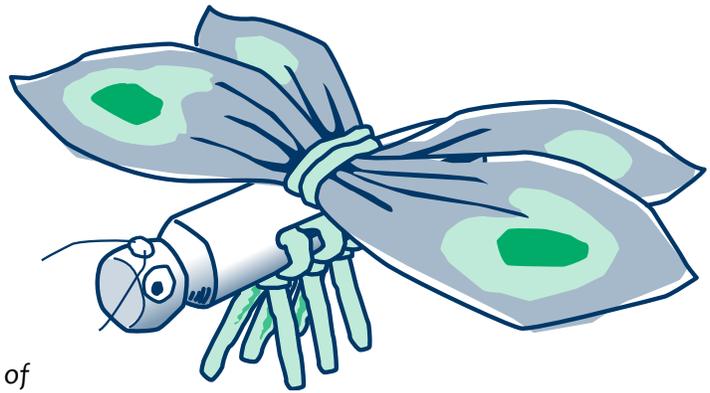




together and twist the last pipe cleaner around both. Place the wings behind the last set of legs and twist-tie the pipe cleaner in place around the clothespin.

4. Attach the antennae to the tacky glue on top of the head. Your butterfly is now complete. Enjoy its beauty!

(Adapted from an idea for a dragonfly activity provided by Madeline Daniels, Solano County Master Gardener, University of California Cooperative Extension.)



Additional Activities

1. Have students plan a tasting party featuring a variety of fruits and vegetables as snacks.
2. Have students record their observations of advertisements in different media: television, the Internet, radio, and magazines. They can then write about their experience in their journals.
3. Try a more detailed activity by having the students evaluate ads on television at different times of the day (e.g., Saturday morning cartoons, after-school cartoons, weekday evening sitcoms.) Have them record the day and time and the program they were watching. How many food products are advertised during a half-hour show? How many times was each of the food groups advertised? What types of products are being advertised? Would they buy the products because of the ads? (If you do not want to give the students the homework assignment of watching television, videotape a few ads and play them to the class.)
4. Have students work in small groups to create their own commercial skits for fresh fruits and vegetables. If resources allow, the skits could be videotaped and shown to the entire school.
5. Start a butterfly garden at your school. Check with a local nursery or master gardener to determine which plants will grow well in your area and attract the most butterflies.



NAME: _____

DATE: _____

Handout 8-1

How Companies Advertise

Answer the following questions for an advertisement of your choice.

1. What food product is being advertised?

2. What about the ad catches your attention?

3. What do you like about the ad?

4. What do you not like about the ad?

5. After looking at this ad, would you buy this food? Why or why not?

6. How would you like to change the ad? Draw your ideas in the box shown below.



NAME: _____

DATE: _____

Handout 8-2

Eat My Food

Create an advertisement for a fruit or vegetable.

1. What is the name of the fruit or vegetable you are going to advertise?

2. What are some things about this food that you like and could make known in your advertisement?

3. Can you think of a catchy phrase to help sell your fruit or vegetable? (Example: "Got milk?")

4. Draw an advertisement for your fruit or vegetable, including the information from your answers to the questions noted above.

smart shopping for veggies and fruits



10 tips for affordable vegetables and fruits

It is possible to fit vegetables and fruits into any budget. Making nutritious choices does not have to hurt your wallet. Getting enough of these foods promotes health and can reduce your risk of certain diseases. There are many low-cost ways to meet your fruit and vegetable needs.

1 celebrate the season

Use fresh vegetables and fruits that are in season. They are easy to get, have more flavor, and are usually less expensive. Your local farmer's market is a great source of seasonal produce.



2 why pay full price?

Check the local newspaper, online, and at the store for sales, coupons, and specials that will cut food costs. Often, you can get more for less by visiting larger grocery stores (discount grocers if available).

3 stick to your list

Plan out your meals ahead of time and make a grocery list. You will save money by buying only what you need. Don't shop when you're hungry. Shopping after eating will make it easier to pass on the tempting snack foods. You'll have more of your food budget for vegetables and fruits.

4 try canned or frozen

Compare the price and the number of servings from fresh, canned, and frozen forms of the same veggie or fruit. Canned and frozen items may be less expensive than fresh. For canned items, choose fruit canned in 100% fruit juice and vegetables with "low sodium" or "no salt added" on the label.



5 buy small amounts frequently

Some fresh vegetables and fruits don't last long. Buy small amounts more often to ensure you can eat the foods without throwing any away.

6 buy in bulk when items are on sale

For fresh vegetables or fruits you use often, a large size bag is the better buy. Canned or frozen fruits or vegetables can be bought in large quantities when they are on sale, since they last much longer.

7 store brands = savings

Opt for store brands when possible. You will get the same or similar product for a cheaper price. If your grocery store has a membership card, sign up for even more savings.

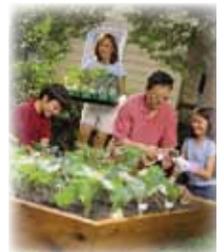
8 keep it simple

Buy vegetables and fruits in their simplest form. Pre-cut, pre-washed, ready-to-eat, and processed foods are convenient, but often cost much more than when purchased in their basic forms.



9 plant your own

Start a garden—in the yard or a pot on the deck—for fresh, inexpensive, flavorful additions to meals. Herbs, cucumbers, peppers, or tomatoes are good options for beginners. Browse through a local library or online for more information on starting a garden.



10 plan and cook smart

Prepare and freeze vegetable soups, stews, or other dishes in advance. This saves time and money. Add leftover vegetables to casseroles or blend them to make soup. Overripe fruit is great for smoothies or baking.

la buena compra de vegetales y frutas



10 consejos para economizar en vegetales y frutas

Es posible incluir vegetales y frutas en todo presupuesto. Tomar decisiones nutritivas no tiene que costar demasiado dinero. Comer estos alimentos en cantidades suficientes promueve la buena salud y puede ayudarle a reducir el riesgo de contraer ciertas enfermedades. Hay muchas maneras económicas de satisfacer sus necesidades de consumo de frutas y vegetales.

1 celebre la temporada

Use frutas y vegetales frescos de temporada. Son fáciles de obtener, saben mejor y, por lo general, cuestan menos. Su mercado local es una fuente excelente de productos frescos de temporada.



2 no vale la pena pagar el precio completo

Busque en el periódico local, en internet y en las tiendas las ventas especiales, cupones de descuento y ofertas que pueden reducir el costo de los alimentos. A menudo, puede comprar más por menos en supermercados (o tiendas de descuento, si están disponibles).

3 mantenga una lista de compras

Planifique sus comidas por adelantado y haga una lista de compras. Ahorrará dinero al comprar sólo lo que necesita. No vaya de compras cuando tenga hambre. Ir de compras después de comer hará que sea más fácil pasar por alto los bocado tentadores. Tendrá más dinero disponible en su presupuesto para comprar vegetales y frutas.

4 pruebe productos enlatados o congelados

Compare el precio y la cantidad de raciones de las variedades frescas, enlatadas y congeladas de los mismos vegetales o frutas. Los artículos enlatados y congelados pueden ser menos costosos que los frescos. En el caso de artículos enlatados, elija frutas envasadas en 100% jugo de fruta y vegetales con etiquetas que indican "bajo en sodio" o "sin sal adicional" ("low in sodium" o "without added salt").



5 compre cantidades pequeñas frecuentemente

Algunos vegetales y frutas frescas no duran mucho. Compre cantidades pequeñas con mayor frecuencia para garantizar que pueda comerlos y no se echen a perder.

6 compre a granel cuando los artículos estén en venta especial

En el caso de los vegetales y las frutas que usa con frecuencia, las bolsas más grandes son más económicas. Las frutas y vegetales enlatados y congelados duran más y se pueden comprar en cantidades grandes cuando están en venta especial.

7 las marcas de las tiendas = ahorros para usted

Si es posible elija comprar las marcas de las tiendas. Obtendrá un producto idéntico o similar a un precio módico. Si su supermercado tiene una tarjeta de descuento para miembros, inscríbese para ahorrar aún más.

8 mantenga las cosas simples

Compre los vegetales y las frutas en sus formas más simples. Los alimentos pre cortados, pre lavados, listos para el consumo y procesados son convenientes pero a menudo cuestan mucho más que si se compran en sus formas frescas.



9 cultive sus propios vegetales y frutas

Cultive alimentos frescos, económicos y sabrosos, en el huerto, jardín, o en el balcón, para añadir a sus comidas. Para los principiantes, las hierbas, los pepinos, pimientos o tomates son buenas opciones. Busque en su biblioteca local o en línea para obtener más información sobre cómo sembrar un huerto.



10 planifique y cocine de manera astuta

Prepare de antemano y congele sopas, guisos u otros platos con vegetales. Eso le ahorrará tiempo y dinero. Agregue restos de vegetales a cazuelas, o mézclelos para hacer sopa. Las frutas maduras son excelentes para hacer batidos o para hornear.

eating better on a budget



10 tips to help you stretch your food dollars

Get the most for your food budget! There are many ways to save money on the foods that you eat. The three main steps are planning before you shop, purchasing the items at the best price, and preparing meals that stretch your food dollars.

1 plan, plan, plan!

Before you head to the grocery store, plan your meals for the week. Include meals like stews, casseroles, or stir-fries, which “stretch” expensive items into more portions. Check to see what foods you already have and make a list for what you need to buy.

2 get the best price

Check the local newspaper, online, and at the store for sales and coupons. Ask about a loyalty card for extra savings at stores where you shop. Look for specials or sales on meat and seafood—often the most expensive items on your list.



3 compare and contrast

Locate the “Unit Price” on the shelf directly below the product. Use it to compare different brands and different sizes of the same brand to determine which is more economical.

4 buy in bulk

It is almost always cheaper to buy foods in bulk. Smart choices are family packs of chicken, steak, or fish and larger bags of potatoes and frozen vegetables. Before you shop, remember to check if you have enough freezer space.

5 buy in season

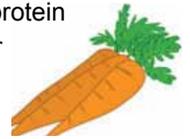
Buying fruits and vegetables in season can lower the cost and add to the freshness! If you are not going to use them all right away, buy some that still need time to ripen.

6 convenience costs... go back to the basics

Convenience foods like frozen dinners, pre-cut vegetables, and instant rice, oatmeal, or grits will cost you more than if you were to make them from scratch. Take the time to prepare your own—and save!

7 easy on your wallet

Certain foods are typically low-cost options all year round. Try beans for a less expensive protein food. For vegetables, buy carrots, greens, or potatoes. As for fruits, apples and bananas are good choices.



8 cook once...eat all week!

Prepare a large batch of favorite recipes on your day off (double or triple the recipe). Freeze in individual containers. Use them throughout the week and you won't have to spend money on take-out meals.

9 get your creative juices flowing

Spice up your leftovers—use them in new ways. For example, try leftover chicken in a stir-fry or over a garden salad, or to make chicken chili. Remember, throwing away food is throwing away your money!

10 eating out

Restaurants can be expensive. Save money by getting the early bird special, going out for lunch instead of dinner, or looking for “2 for 1” deals. Stick to water instead of ordering other beverages, which add to the bill.

10
consejos
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en nutrición

coma mejor dentro del presupuesto



10 consejos para ayudarle a que los dólares para la comida le rindan

¡Haga rendir su presupuesto de comidas! Hay muchas maneras de ahorrar dinero en la comida. Los tres pasos principales son planificar antes de comprar, comprar los artículos al mejor precio y preparar comidas que hagan rendir su presupuesto.

1 **planificar, planificar, planificar**
Antes de dirigirse al supermercado, planifique sus comidas de la semana. Incluya comidas como guisos, cazuelas o frituras, las cuales hacen rendir los productos caros en más porciones. Verifique que ingredientes tiene y haga una lista de los que necesita comprar.

2 **obtenga el mejor precio**
Busque ofertas y cupones en el periódico local, internet o supermercados. Para lograr ahorros adicionales pregunte por tarjetas de afiliado en la tienda donde hace sus compras. Busque ofertas en carnes y productos marinos, los cuales a menudo son los productos más caros de su lista.



3 **compare y busque diferencias**
Busque el "precio unitario" mostrado en el estante, directamente debajo del producto. Utilícelo para comparar diferentes marcas y tamaños del mismo producto y determinar cuál es el más económico.

4 **compre a granel**
Casi siempre es más barato comprar alimentos a granel. Por ejemplo los paquetes familiares de pollo, filete o pescado, bolsas de papa grandes y vegetales congelados. Antes de comprar, recuerde verificar si tiene suficiente espacio en el congelador.

5 **compre de acuerdo con la estación**
Comprar frutas y vegetales de temporada puede disminuir el costo y añadir productos frescos. Si no va a utilizarlas inmediatamente, compre las que necesitan tiempo para madurar.

6 **costos de conveniencia... regrese a lo básico**
Los alimentos procesados como cenas congeladas, vegetales cortados y arroz, avena o sémola instantáneos o pre-cocidos le costarán más. Ahorre preparándolos usted misma.

7 **impacto en su bolsillo**
Ciertos alimentos son opciones de bajo costo durante todo el año. Ensaye con los frijoles para obtener comidas baratas con proteínas. En cuanto a vegetales, compre zanahorias, verduras o papas. En cuanto a las frutas, las manzanas y los plátanos son buenas opciones.



8 **cocine todo de una vez... coma durante toda la semana**
Preparare lotes grandes de sus recetas favoritas en su día libre (doble o triplique la receta). Congele en recipientes individuales. Utilícelos durante toda la semana y no tendrá que gastar dinero en comidas para llevar.

9 **ponga a fluir sus jugos creativos**
Utilice las sobras en nuevas formas. Por ejemplo, pruebe el pollo sobrante frito, en una ensalada o haga ají de pollo. Recuerde, desechar alimentos es tirar el dinero.

10 **comer afuera**
Los restaurantes pueden resultar caros. Ahorre dinero obteniendo promociones especiales, salga a almorzar en lugar de ir a cenar, o busque ofertas de "2 por 1." Pida agua en lugar de otras bebidas, las cuales suman a la cuenta final.



Family Activity

What kind of information do food ads give you?

Do you see any ads for fruits and vegetables?

Have ads ever influenced your food choices? When? How?

Draw an ad for your family's favorite food or meal.



Recipe of the Week

Have you ever eaten "Bugs on a Log"?

This is a very simple snack that can be made with only a few items. Next time your friends come over to play, make some for them.

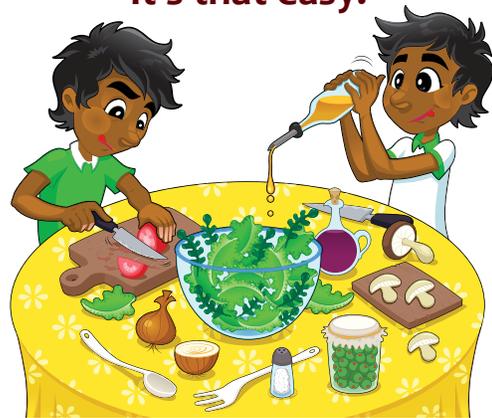
What you will need:

- A stalk of celery (your log)
 - Some peanut butter or low-fat yogurt (the dirt)
 - Some raisins or other dried fruit (the bugs!)
- (What food groups are you eating from?)

What to do:

1. Clean a stalk of celery.
2. Spread some peanut butter or cottage cheese down the center of the celery.
3. Sprinkle raisins or dried fruit on top! Enjoy!

It's that easy!



Lesson 9

Making Healthful Snacks

OBJECTIVES

- To learn how to make healthful low-fat snacks that include all food groups
- To harvest, clean, and eat the fruits and vegetables from the garden

APPLICABLE CONTENT STANDARDS

- English–language arts
- Mathematics
- Science

(See the matrix in Appendix B.)

Materials for In-class Lesson and Activities	Materials for Gardening Activity
Handouts: 9-1 Eating Foods from MyPlate “10 tips” See the list of materials (page 152). Recipe cards (one/station)	Tools to harvest the fruits and vegetables A bucket of water and access to clean, running water to wash the fruits and vegetables Colander or strainer (to rinse the crops)





Preparation for In-class Lesson and Activities	Preparation for Gardening Activity
<p>Before the lesson (may take several days to collect supplies):</p> <p>Photocopy handout 9-1, “10 tips,” and the recipe cards.</p> <p>Start gathering materials.</p> <p>Arrange for food service staff or parents to assist during the lesson (you will need at least one adult at each station).</p> <p>Be sure to check with school officials before bringing food into the classroom. Each school has different regulations. Methods of obtaining the food are as follows:</p> <ul style="list-style-type: none"> • Assign each student an item to bring to class. • Have each student bring one dollar. • Check with the cafeteria for donations. • Check with local stores or farms for donations. • Harvest the garden. <p>Find out whether any students have food allergies.</p>	<p>Day before the lesson:</p> <p>Gather materials.</p>
<p>Just before the lesson:</p> <p>Set up each station. (See details on pages 146–151)</p> <p>Have students take out nutrition folders.</p>	<p>Before the nutrition activity:</p> <p>Harvest the fruits and vegetables from the garden. (If time is short, plan to harvest a day or two before the lesson to allow time for cleaning the produce.)</p>

Nutrition Lesson Activities

(60 min.)

1. Review of all previous lessons (if time is short, plan the review activity for the end of the lesson.)

Lesson 1: Nutrition and Gardening

In the first lesson we talked about all the different parts of the plant, and we learned that we can eat them all.

(Roots, stem, leaves, flower, fruit, and seeds)

We eat all parts of the plant to get all the nutrients that our bodies need to grow and stay healthy.





Lesson 2: Nutrients We Need

Who remembers the different classes of nutrients?

(Carbohydrates, protein, fat, vitamins, minerals, and water)

To make sure that we eat the right amount of foods to get the right amount of nutrients, we rely on tools such as MyPlate.

Lesson 3: MyPlate

Who remembers the different food groups on MyPlate?

(Grains, vegetables, fruits, dairy, and protein)

MyPlate shows us how much of each food group we need to eat to get the right amount of nutrients.

Lesson 4: Food Math

Remember some of the visual cues we looked at to identify serving sizes more easily?

Baseball = 1 cup; cupcake wrapper = 1/2 cup; cupped handful = 1/4 cup; 2 ping pong balls = 4 tbsp.; 3 dominoes = 1 1/2 ounces; 2 CDs or a deck of playing cards = 2–3 ounces

Lesson 5: Food Labels

Another tool to determine how much of each nutrient is in our foods is the food label. We can also use the label to compare different foods and look for ingredients that we may be allergic to. Remember the counting game we played to determine how nutritious different foods were?

Lesson 6: Get Physically Active

In addition to eating healthy foods, remember that it is also important for us to be active.

Why is it important for us to be physically active?

(Keeps us healthy and keeps our muscles strong, especially our hearts) Give students another opportunity to check their pulse.

Lesson 7: Goal Setting

In this lesson we tied everything together and set some goals to strive for. These goals were realistic, and we aim to meet them over the course of one to three days.

Lesson 8: Consumerism

All companies use some form of advertising to get you to buy their products. We need to be aware of advertising tactics and determine whether they influence our food choices.

2. Health concerns

Safety should be your first concern when you are cooking with children. Check with the nutrition services staff at your school to find out whether your school has any rules or regulations forbidding food in the classroom. Consider asking your nutrition services director to come into your classroom a few days before you plan to cook so that the students can learn proper food-handling techniques. Teach students the importance of sanitation and kitchen tool safety. The nutrition services staff may also be interested in helping out on the actual cooking day.



Check whether any students have food allergies. Some people who are highly allergic to peanuts suffer severe adverse reactions. If you have such a student in your class, it may be best to eliminate the peanuts entirely. Consult students' parents if there is a question. A safe activity is preferable to one in which there is a risk of an adverse reaction from a student. Some students may also be lactose-intolerant. It is likely that they could tolerate the small amount of yogurt in the smoothies, but if the student is reluctant, simply offer him or her plain orange juice.

3. Introduction to making snacks

- 🍌 The lessons so far have focused on the types of foods we should eat to help us lead a healthy life. Today we are going to learn how to make some snacks that can be a part of a healthful diet.
- 🍌 In addition, if you have grown many wonderful things in the garden, it is now time to enjoy eating them. (If the garden was not a component of the lessons, discuss how farmers have worked hard to grow produce for us to eat.)
- 🍌 Today the classroom will be turned into a kitchen. Before we begin, there are some kitchen rules that must be followed:
 - 💧 Wash hands, especially before making snacks so that students do not spread germs to the foods. All students *must* wash their hands.
 - 💧 Follow directions.
 - 💧 Work quietly so everyone can hear the directions.
 - 💧 Handle the food as little as possible and do so only with clean hands.
 - 💧 Handle knives carefully and be aware of hot objects.

4. Making snacks

- 🍌 See the directions posted at each station.
- 🍌 Set up stations before class begins. Have one adult assistant at each station.
- 🍌 Explain briefly to the class what will happen at each station.
- 🍌 Divide the class into three groups. (See the activities noted at the end of the lesson for additional group ideas.)
- 🍌 Have each group spend about seven minutes at each station to make the snack.
- 🍌 Avoid large messes at each of the stations by setting up a competition between the groups. The group that makes the least mess wins. The prize may be an extra smoothie for the group. Keep it a surprise!
- 🍌 Give students a written activity to work on at their desks while they wait for their turn a cooking activity. It will keep students usefully occupied. Distribute the Eating Foods from the MyPlate handout (9-1). Students are to fill it in with the foods they used to make their snacks. You can also have the students write in their journals answers to the following questions: What are some things you can do to be healthy? What does *healthy* mean to you? What do you like about making healthful snacks?





5. Cleaning up

- Have each student go back to the last station and help clean. Send some students around the room to pick up any trash after they eat their snacks.

6. Eating snacks

- After the students have made each of the snacks, they can return to their desks to start eating.
- As students eat the snacks they made, have them complete their written activity or express their thoughts about the snack making. Which are their favorite snacks? Why? The snacks are meant to be simple enough for them to make at home. After learning how to do it, do they think they could?

Gardening Activity

(20 min.)

Harvest the fruits and vegetables from the garden for use in the snack lesson. Clean the crops by first dipping them in a bucket of water and rubbing the surface to remove the excess soil. Then rinse them under clean running water to remove any insects and invisible microorganisms that may still cling to them.

Additional Activities

- You may also divide the class into four or more groups so that fewer students are at a station each time. Here are some additional ideas for group activities:
 - Writing activity
 - Food safety activity
 - Kitchen safety activity
 - Napkin folding
 - Setting a table
- Discuss the nutrient content of the snacks prepared. Which snack provides which nutrients? This information can be found by examining the labels. If fresh fruits and vegetables were used, consult the Fresh Fruit and Vegetable Photo Cards for nutrient information. (To order, look under California Department of Education in Appendix D.)
- Take the students on a field trip to a farmers market if you are unable to grow some of the items in your own garden. Use foods from the farmers market to make snacks in the classroom.
- Select foods and snacks accordingly if the class is studying a particular culture or time period.
- Incorporate math lessons by paying closer attention to measuring out the ingredients. Conduct a science experiment by varying the amount or type of ingredients in a recipe for bread, for example. What will happen to the bread if you use more or less yeast or flour? What happens if you dissolve the yeast in cold water rather than hot water?



Station One: Fruit Smoothies	
Ingredients*	Materials
Orange juice	2 blenders
Low-fat vanilla yogurt	Knives
Frozen strawberries or fresh strawberries from garden (may need to blend in some ice with fresh berries)	2 wet measuring cups
Bananas	4 dry measuring cups (1 cup)
	Paper cups (7 oz.)
	Paper plates
	Paper napkins
	Pitcher
	Plastic garbage bags
	Extension cord
	Wet cloth/sponge
	2 rubber scrapers

*See the list on page 152 for class amounts.

Setup

1. Set out all the ingredients and materials. Plan to prepare smoothies in two blenders at once.
2. Cut bananas in half (leave the peel on) and place on a paper plate.
3. Have garbage bags and a sponge handy.





Recipe (For one blender)

1 cup orange juice

1 cup frozen strawberries

1 cup low-fat vanilla yogurt

1 1/2 bananas

Place all ingredients in the blender. Blend until smooth. Fill about five paper cups (7 oz. each) about three-fourths of the way full.

Instructions

1. When students come to the station, have them form two lines—one behind each blender.
2. The students do one of the following jobs depending on their position in the line and then go to the end of the line. The students should touch the foods as little as possible. (Both lines should be going at once; this will save a lot of time.) Students' jobs are as follows:
 - a. Measure juice into a wet measuring cup and pour into the blender.
 - b. Measure yogurt into a dry measuring cup and pour into the blender.
(Use a rubber scraper if necessary.)
 - c. Measure strawberries into a dry measuring cup and place them in the blender.
 - d. Peel bananas (touch only the banana peel, not the banana itself) and place in the blender.
 - e. Blend for 15 seconds or until smooth. (If all the students in line have already had a job, the blender should be operated by an adult.)
3. Adult assistant pours the smoothie into paper cups. The recipe probably yields enough for leftovers, which may be stored in a pitcher until the end of the lesson.
4. Students may have a small sip of the smoothie, but the rest is to be saved for later.
5. Once the students have made and tasted their smoothie, they should take it back to their desk and complete handout 9-1.

Discussion with students during snack making

1. Which food groups are being used?
2. What other foods would you like to add to the smoothie?



Station Two: Garden Pita Pockets

Ingredients*	Materials
Whole wheat pita pocket bread (or tortillas)	Paper plates
Precut mixed leafy greens	Paper napkins
Shredded carrots	Big salad bowl
Broccoli florets (bite-size pieces)	5 paper bowls
Grated cheddar cheese	6 measuring spoons (1/2 tbsp.)
Salsa	Wet cloth/sponge
Ranch dressing (low-fat)	Plastic garbage bag
Any other vegetables from the garden	

*See the list on page 152 for class amounts.

Setup

1. Set out all the ingredients and materials.
2. Put greens in a salad bowl. Fill paper bowls with carrots, broccoli, cheese, salsa, and ranch dressing. (Plan to put out one-third of the food for each group.) Put a measuring spoon in each bowl.
3. Have garbage bags and a sponge handy.





Recipe

One whole wheat pita bread sliced in half	1 tbsp. grated cheddar cheese
Mixed leafy greens	1 tbsp. salsa
Shredded carrots	1 tbsp. ranch dressing
Broccoli florets	

Fill the pita half with mixed greens. Add carrots and broccoli. Top with cheese, salsa, and ranch dressing.

Instructions

1. When students come to the station, have them line up behind a stack of pita bread. Give each student a plate with half of a pita and show them how to fill a pita. Have one pita already filled as an example.
2. Students will fill their own pitas. Warn them to be careful because pitas tear easily. Encourage them to select most of the vegetables. Encourage all students to try something they may not have tried before, especially if it is from their garden. Students do not have to use all the toppings, but if they do, they get only 1 tablespoon of each.
3. Students may have a small taste, but the rest is to be saved for use later.
4. Once the students have made and tasted their pitas, they should take them back to their desk and complete handout 9-1.

Discussion with students during snack making

1. Which food groups are being used?
2. What other foods (e.g., sunflower seeds: protein group) would you like to add to the pita pocket?
3. Can you make up another name for the snack? (Encourage the use of adjectives.)
4. Discuss the fat content of the dressing and salsa. (Read labels.)



Station Three: Trail Mix	
Ingredients*	Materials
Dry roasted peanuts	Plastic self-sealing snack bags (one per student) 5 paper bowls 5 measuring spoons (1 tbsp.)
Sunflower seeds (without shells)	
Raisins	
Chocolate pieces/chips	
Small crackers or pretzels	

*See the list on page 152 for class amounts.

Setup

1. Set out all ingredients and materials. Plan to have the whole group working at once.
2. Put ingredients into separate bowls. Place a measuring spoon in each.
3. Have plastic self-sealing bags handy.





Recipe

1 tbsp. peanuts

1 tbsp. chocolate pieces/chips

1 tbsp. sunflower seeds without shells

1 tbsp. crackers/pretzels

1 tbsp. raisins

Measure the ingredients into a bag. Mix and enjoy!

Instructions

1. When students come to the station, give each one a plastic self-sealing snack bag.
2. Demonstrate for students how to scoop out 1 tablespoon.
3. Students fill their own bags. They do not have to use all the ingredients, but if they do, they get only 1 tablespoon of each. (This is to limit the chocolate intake.) Encourage them to select at least three different items.
4. Students may have a small taste, but the rest is to be saved for later.
5. Once the students have made and tasted their mix, they should take it back to their desk and complete handout 9-1.

Discussion with students during snack making

1. Which food groups are being used?
2. What other foods would you like to add to the trail mix?
3. Can you make up another name for the snack?
4. Discuss the fat content of the foods used (read labels). Any other suggested low-fat items? (pretzels, dried fruit)



Materials for Food Stations

Food Items	Approximate Amounts Needed for 30 Students (if divided into three groups)
Orange juice	48 fl. oz. (about 6 cups)
Low-fat vanilla yogurt	6 cups
Frozen strawberries*	6 cups (about three 16 oz. packages)
Bananas	9
Whole wheat pitas	15 whole pitas
Mixed leafy greens*	3/4 to 1 pound
Mini carrots*	Half of a large bag
Broccoli*	2 or 3 heads
Grated cheddar cheese	16 oz.
Salsa*	24 oz.
Low-fat ranch dressing	8 oz.
Dry roasted peanuts	1 small jar
Shelled sunflower seeds*	1 small jar
Raisins	24 oz. box
Chocolate pieces/chips	12–16 oz. bag
Small crackers or pretzels	16 oz. bag
Paper cups	35
Paper plates	40
Paper bowls	15
Plastic self-sealing snack bags	35
Paper napkins	A lot!
Wet measuring cups	2
Dry measuring cups	4 1-cup measures
Measuring spoons	Several tablespoons
Plastic forks, knives, and spoons	A couple of each
Blenders	3
Extension cord	1
Rubber scraper	1
Large salad bowl	1
Plastic pitchers	1
Plastic garbage bags	Several
Sponges	3

*Items easily grown in the garden.



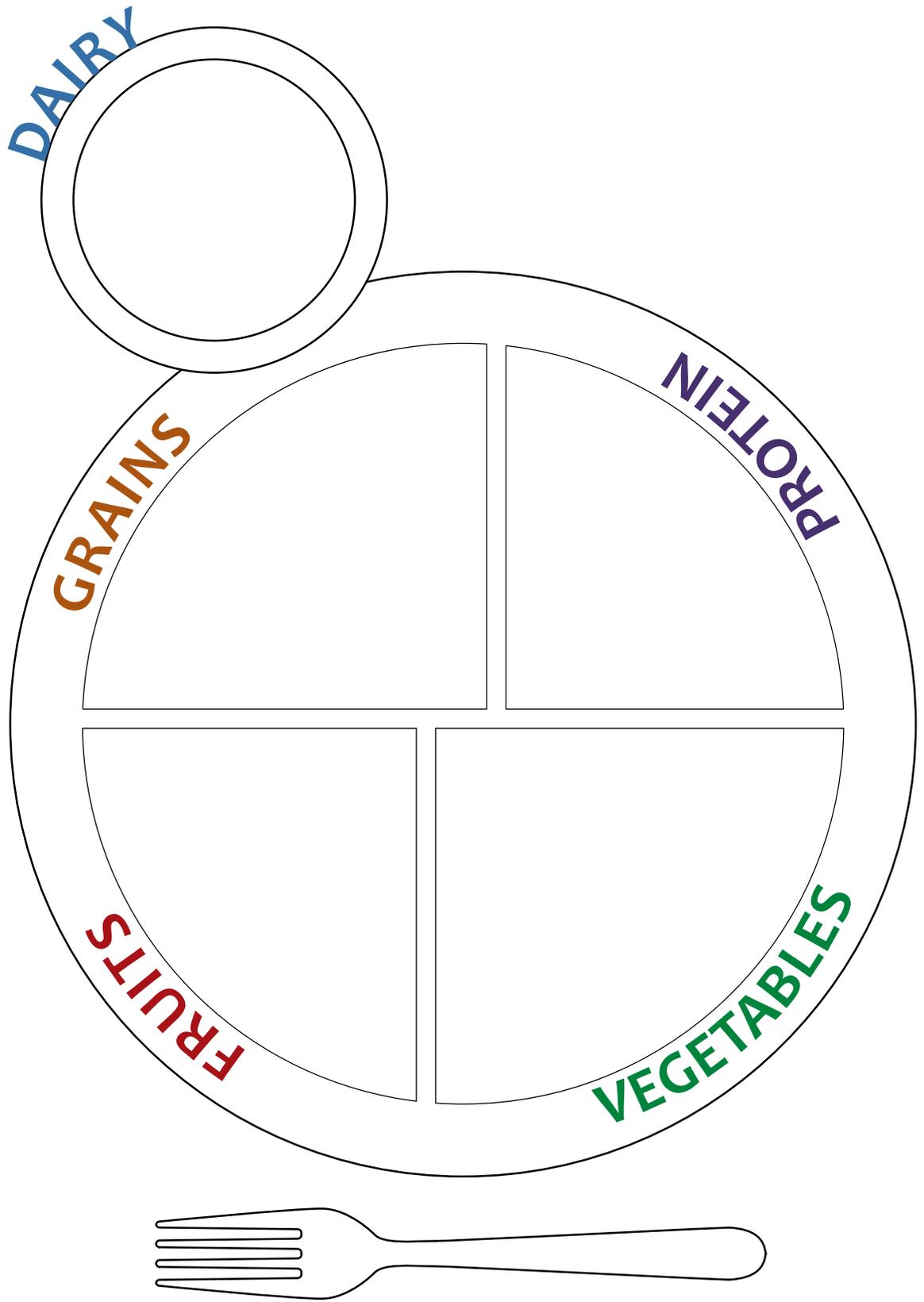
NAME:

DATE:

Handout 9-1

Eating Foods from MyPlate

Fill in MyPlate with the foods you used to make your snacks.





Recipe Card
Fruit Smoothie

1 cup orange juice

1 cup low-fat vanilla yogurt

1 cup frozen strawberries

1 1/2 bananas

- 1. Measure out all ingredients and place in the blender.**
- 2. Blend until smooth.**
- 3. Fill 5 paper cups about 3/4 full.**





Recipe Card

Garden Pita Pockets

1/2 pita pocket

1 tbsp. grated cheese

Mixed leafy greens

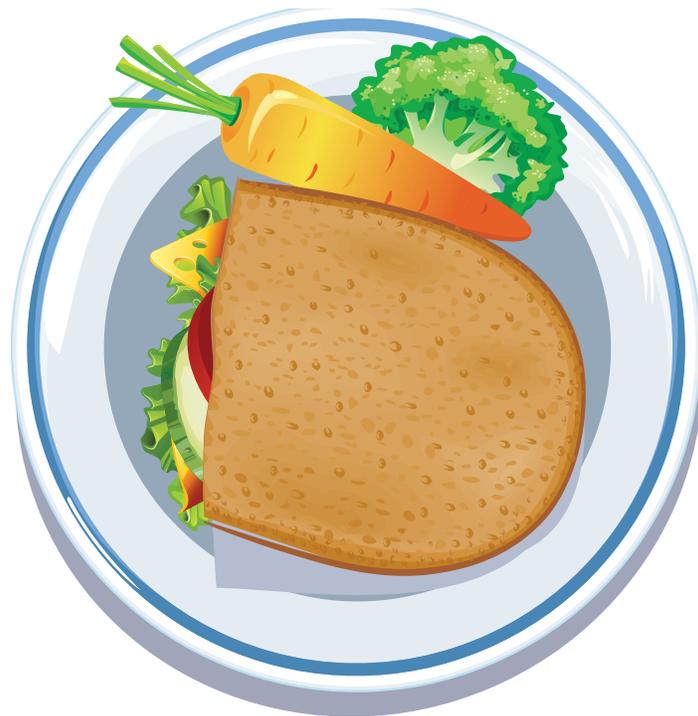
1 tbsp. salsa

Shredded carrots

1 tbsp. ranch dressing

Broccoli florets

- 1. Fill pita pocket with mixed leafy greens.**
- 2. Add carrots and broccoli.**
- 3. Top with cheese, salsa, and ranch dressing.**





Recipe Card
Trail Mix

1 tbsp. peanuts

1 tbsp. sunflower seeds

1 tbsp. raisins

1 tbsp. small crackers or pretzels

1 tbsp. chocolate pieces/chips

- 1. Measure all the ingredients in to a bag.**
- 2. Include at least three different ingredients.**
- 3. Mix and enjoy!**



10 tips

Nutrition
Education Series

cut back on your kids' sweet treats

10 tips to decrease added sugars



Limit the amount of foods and beverages with added sugars your kids eat and drink. If you don't buy them, your kids won't get them very often. Sweet treats and sugary drinks have a lot of calories but few nutrients. Most added sugars come from sodas, sports drinks, energy drinks, juice drinks, cakes, cookies, ice cream, candy, and other desserts.

1 serve small portions

It's not necessary to get rid of all sweets and desserts. Show kids that a small amount of treats can go a long way. Use smaller bowls and plates for these foods. Have them share a candy bar or split a large cupcake.

2 sip smarter

Soda and other sweet drinks contain a lot of sugar and are high in calories. Offer water, 100% juice, or fat-free milk when kids are thirsty.



3 use the check-out lane that does not display candy

Most grocery stores will have a candy-free check-out lane to help moms out. Waiting in a store line makes it easy for children to ask for the candy that is right in front of their faces to tempt them.

4 choose not to offer sweets as rewards

By offering food as a reward for good behavior, children learn to think that some foods are better than other foods. Reward your child with kind words and comforting hugs, or give them non-food items, like stickers, to make them feel special.

5 make fruit the everyday dessert

Serve baked apples, pears, or enjoy a fruit salad. Or, serve yummy frozen juice bars (100% juice) instead of high-calorie desserts.



6 make food fun

Sugary foods that are marketed to kids are advertised as "fun foods." Make nutritious foods fun by preparing them with your child's help and being creative together. Create a smiley face with sliced bananas and raisins. Cut fruit into fun and easy shapes with cookie cutters.

7 encourage kids to invent new snacks

Make your own snack mixes from dry whole-grain cereal, dried fruit, and unsalted nuts or seeds. Provide the ingredients and allow kids to choose what they want in their "new" snack.



8 play detective in the cereal aisle

Show kids how to find the amount of total sugars in various cereals. Challenge them to compare cereals they like and select the one with the lowest amount of sugar.

9 make treats "treats," not everyday foods

Treats are great once in a while. Just don't make treat foods an everyday thing. Limit sweet treats to special occasions.

10 if kids don't eat their meal, they don't need sweet "extras"

Keep in mind that candy or cookies should not replace foods that are not eaten at meal time.

10
consejos
Serie
de educación
en nutrición

Reduzca el consumo de golosinas de sus hijos



10 consejos para reducir el azúcar adicional

Limite la cantidad de alimentos y bebidas endulzadas que sus hijos comen y beben. Si no los compra, sus hijos no los beberán muy a menudo. Las golosinas y las bebidas endulzadas tienen muchas calorías pero pocos nutrientes. La mayoría de los azúcares adicionales provienen de gaseosas, bebidas deportivas, bebidas de energía, bebidas a base de jugo, pasteles, galletas dulces, helados, dulces y otros postres.

1 sirva porciones pequeñas

No es necesario eliminar completamente los dulces y los postres, pero enseñe a sus hijos que las golosinas en cantidades pequeñas son suficientes. Use tazones y platos más pequeños para servir esos alimentos. Permita que sus hijos compartan una barra de dulce o un bizcocho grande.



2 beba juiciosamente

Las gaseosas y otros refrescos dulces contienen mucho más azúcar y más calorías. Cuando sus hijos tengan sed ofrézcales agua, 100% jugo o leche descremada.

3 use la cajera que no tenga dulces

La mayoría de los supermercados tienen cajeras sin dulces para ayudar a las madres. La espera en la fila para pagar anima a los niños a pedir los tentadores dulces que les rodean.

4 no ofrezca dulces como recompensas

Al ofrecer alimentos como recompensas del buen comportamiento, los niños aprenden a pensar que algunos alimentos son mejores que otros. Recompense a sus hijos con palabras cariñosas y abrazos de consuelo, u ofrézcales otros artículos no comestibles como calcomanías para que se sientan especiales.

5 haga que las frutas sean el postre de todos los días

Sirva manzanas o peras asadas, o ensalada de frutas. También sirva sabrosas barras de jugo congelado (100% jugo) en lugar de postres con alto contenido de calorías.



6 haga las comidas divertidas

Las golosinas para los niños se comercializan como “comidas divertidas.” Haga que las comidas nutritivas sean divertidas al prepararlas con ayuda de sus hijos y de manera creativa. Invente una cara sonriente con rebanadas de plátano y pasas. Use moldes para galletitas para cortar las frutas en formas divertidas y fáciles.

7 anime a sus hijos a inventarse bocadillos nuevos

Prepare sus bocadillos con cereales secos de granos integrales, frutas secas y nueces o semillas sin sal. Provea los ingredientes y permita que los niños elijan lo que quieren preparar como bocadillo “nuevo.”



8 juegue al detective en el estante de cereales

Enseñe a los niños cómo encontrar la cantidad total de azúcar en varios cereales. Anímelos a comparar los cereales que les gustan y a seleccionar el que tenga menos azúcar.

9 haga que las golosinas sean “especiales” no comidas de todos los días

Las golosinas son fabulosas de vez en cuando. Pero no haga que sean comidas de todos los días. Limite las golosinas dulces a ocasiones especiales.

10 si los niños no se comen sus comidas, no hay que darles dulces “extra”

Tenga en mente que los dulces o las galletitas no deben reemplazar los alimentos no consumidos a la hora de comer.

10 tips

Nutrition
Education Series

make celebrations fun, healthy & active



10 tips to creating healthy, active events

Eating healthy and being physically active can be a fun part of parties and events. Great gatherings are easy to do when tasty, healthy foods from all the food groups are offered in a fun, active environment. Above all, focus on enjoying friends and family.

1 make healthy habits part of your celebrations

Food and beverages are a part of an event, but they do not have to be the center of the occasion. Focus on activities to get people moving and enjoy being together.

2 make foods look festive

Decorate foods with nuts or seeds or use new shapes for vegetables. Add a few eye-catching fruits to a favorite dish, serve up a new recipe, or add a sprinkle of almonds or green onions to add just an extra something.

3 offer thirst quenches that please

Make fun ice cubes from 100% juice or add slices of fruit to make water more exciting. Create a "float" by adding a scoop of low-fat sorbet to seltzer water.

4 savor the flavor

Take time to pay attention to the taste of each bite of food. Make small changes in your old recipes or try dishes from another culture to liven things up.

5 use ChooseMyPlate.gov to include foods from the food groups for your party

Offer whole-grain crackers, serve a spicy bean dip and a veggie tray, make fruit kabobs, layer yogurt and fruit to create a sweet parfait. Use whole grains and veggies to make a savory, healthy salad.

6 make moving part of every event

Being physically active makes everyone feel good. Dancing, moving, playing active games, wiggling, and giggling add fun to any gathering.

7 try out some healthier recipes

Find ways to cut back on sugar, salt, and fat as you prepare your favorite recipes. Try out some of the recipes on ChooseMyPlate.gov.

8 keep it simple

Have others participate by contributing a prepared dish, helping with the clean up, or keeping the kids active and moving.

9 shop smart to eat smart

Save money by offering foods that fit your budget. Buy in-season produce when it costs less and tastes better. Plan in advance and buy foods on sale.

10 be a cheerleader for healthy habits

It's never too early for adults to set an example. Keep in mind that children follow what the adults around them do—even at parties.



10 consejos

Serie de educación en nutrición

Haz que las celebraciones sean divertidas, saludables y activas

10 consejos para crear reuniones activas y saludables



E Comer saludablemente y mantenerse físicamente activo puede ser la parte divertida de las fiestas y eventos. Las celebraciones fantásticas pueden ser fáciles de organizar si presentamos alimentos, saludables y deliciosos, de todos los grupos de alimentos en forma divertida. Pero sobre todo disfrute de la compañía de los amigos y de la familia.

1 haz que los hábitos saludables sean parte de las celebraciones

Los alimentos y las bebidas son parte de los eventos, pero no tienen que ser el centro de la reunión. Enfóquese en las actividades para mantener a la gente moviéndose y gozar de su compañía.

2 haz que las comidas se vean festivas

Decore los platos con nueces y semillas, o sirva los vegetales en formas nuevas. Adicione frutas vistosas para sus platos favoritos, sirva una receta nueva, o esparza almendras o cebollas verdes para adicionar algo decorativo.

3 refréscese con sabor

Prepare cubos congelados de jugo 100% de frutas o adicione pedazos de fruta para hacer el agua más aceptable. Invente un "flotante" adicionando una cuchara o porción de helado, bajo en grasa, en un vaso de agua con gas.

4 salve el sabor

Ponga atención a cada bocado de la comida. Haga pequeños cambios en sus recetas antiguas o prepare platos de otras regiones para avivar las comidas.

5 use ChooseMyPlate.gov para incluir alimentos de todos los grupos de alimentos para su fiesta

Ofrezca galletas integrales, sirva crema hecha de frijoles picantes y bandejas de vegetales, prepare kebabs de fruta, o copas con capas de yogur y frutas para crear una ensalada de frutas. Use granos integrales y vegetales para crear ensaladas saludables y llenas de sabor.

6 cree la hora de la movida para cada reunión

El estar físicamente activo le hace sentir bien a cualquiera. Bailar, moverse, jugar y reír adicionan diversión a la reunión.

7 practique recetas saludables

Encuentre maneras de bajar el azúcar, sal, y grasas cuando prepare sus recetas favoritas. Practique las recetas de ChooseMyPlate.gov.

8 manténgalo simple

Haga participar a otros, haciéndolos preparar platos, ayudando a limpiar o ayudando a mantener a los niños activos.

9 compre para comer inteligentemente

Ahorre dinero ofreciendo comidas que estén dentro de su presupuesto. Compre los productos cuando estén de temporada, cuando los precios estén bajos y los productos estén frescos y jugosos. Planifique con anticipación y compre productos en oferta.

10 sea el animador de hábitos saludables

Nunca es muy temprano para que los adultos demuestren a los niños buenos hábitos con el ejemplo. Tenga presente que los niños imitan a los adultos que están cerca de ellos, incluso en las fiestas.





More Recipes for You and Your Family to Enjoy!

Garden Pita Pockets

What you will need:

- 1/2 whole-wheat pita
- Mixed leafy green vegetables
- Baby carrots
- Broccoli florets
- 1 tbsp. grated cheddar cheese
- 1 tbsp. salsa
- 1 tbsp. low-fat ranch dressing

What you will do:

1. Fill the pita with mixed greens.
2. Add the baby carrots and broccoli florets.
3. Top with cheese, salsa, and/or ranch dressing.

Note: Try this recipe with other vegetables from your garden or from the grocery store.

Trail Mix

What you will need:

- 1 tbsp. peanuts
- 1 tbsp. sunflower seeds
- 1 tbsp. raisins
- 1 tbsp. oat cereal pieces
- 1 tbsp. chocolate pieces

What you will do:

1. Measure the ingredients and put them into a bag.
2. Mix and enjoy!

Note: Try this recipe using other nuts, seeds, or dried fruit.

TIPS FOR PARENTS

You can make healthy lifestyles enjoyable for the whole family. Create positive attitudes about foods and activities that support a lifetime of good health. The following tips can help you manage food choices for all of your family members.

Offer toddlers familiar foods. Introduce new foods to preschoolers; they are more willing to try them and enjoy practicing their skills with forks and spoons.

Encourage your children to be physically active.

Encourage your children to eat fruits and vegetables, as well as whole-grain breads and crackers.

Set the structure for eating. Make nutritious foods available for meals and snacks.

Encourage your children to learn about and enjoy a variety of foods.

Let your children explore, prepare, and taste new foods at an early age.



Testing of the Lessons

All the lessons were extensively tested before inclusion in this publication. Once the lessons were drafted, they were taught to a selected fourth-grade classroom to assess the initial clarity of the content and feasibility of the delivery. The lessons were revised using the teacher's and students' comments. The revised lessons were taught shortly thereafter in a different classroom to evaluate all revisions made and reevaluate whether the lessons were clear to another group of students. This review process continued until the authors felt confident about the final content of each lesson. During that time, the lessons were taught in grades three through six to a wide variety of students. Most classes were in regular education, but some were in special education and language immersion. Although the curriculum was not developed solely for use in special-needs classrooms, those students participating in the curriculum activities did seem to enjoy and benefit from the lessons just as much as the students in the regular classes. Once the final version of each lesson was completed, nutrition and gardening professionals reviewed it for accuracy.

The next step in the testing process was an evaluation of the overall effectiveness of the final lessons. The goal was to determine whether the curriculum was effective at improving upper elementary school children's nutrition knowledge and preferences for vegetables. For the purposes of the formal evaluation, nine fourth-grade classrooms were chosen and combined into three groups. One group was taught all the lessons as written here, including the hands-on gardening activities. A second group was taught all the lessons as presented here but did not participate in the hands-on gardening activities. A third group served as the control and did not receive any formal nutrition or gardening education. Students in all three groups were asked a series of questions related to their knowledge of nutrition and preferences for vegetables at three times: prior to the start of the lessons (pretest), immediately following the completion of the lessons (post-test), and six months later (follow-up).

The results were very positive. All students who were taught in this curriculum significantly improved their knowledge of various nutrition topics. Knowledge scores improved by as much as 16 percent between the pre- and post-test periods. Students' increased knowledge was retained up to six months after the lessons had been taught. The control group did not show such improvements. The results regarding students' preferences for vegetables were even more encouraging. The group of students who were taught the in-class nutrition lessons and who participated in the hands-on gardening activities gave significantly higher ratings to five of the six vegetables presented to them. Of the six vegetables, only four were actually grown in the gardens. The students who were taught the in-class nutrition lessons but did not participate in any gardening activities gave significantly higher ratings to only two of the six vegetables presented. (See figures 1 and 2.) The control group showed no significant changes in the students' ratings for any of the vegetables presented.

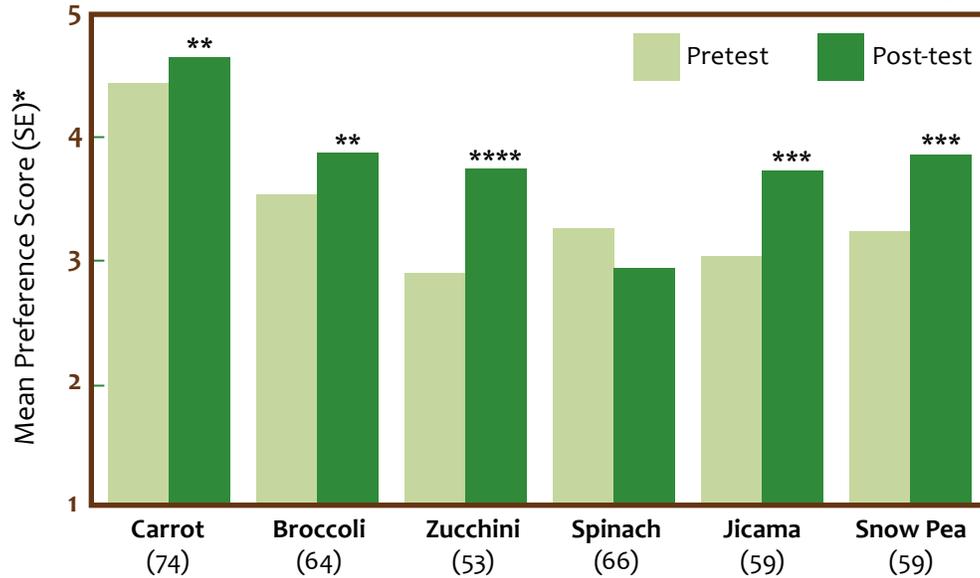
The results indicate that this curriculum is an effective tool for improving upper-elementary school students' nutrition knowledge and preferences for vegetables. Furthermore, those students who planted, harvested, and tasted their own vegetables in the hands-on gardening activities showed an improvement in their preferences for vegetables above and beyond those of the students in the other two groups. This finding is encouraging because research suggests that food preferences



may predict dietary behavior (Harvey-Berino et al. 1997). In other words, one is more likely to eat something perceived as tasting good. This finding lends additional support to the inclusion of the gardening activities. Details of the study may be found in a publication by Morris, Briggs, and Zidenberg-Cherr (2002).

Figure 1

Mean Preference Scores of Students Exposed to Nutrition Lessons and Gardening Activities



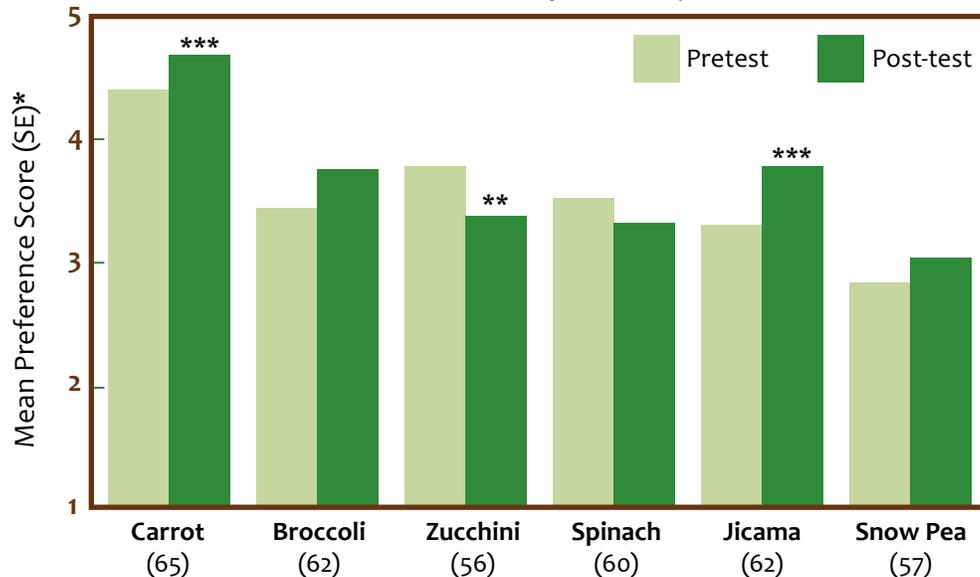
* 5 = I really liked it a lot. 4 = I liked it. 3 = It was OK. 2 = I did not like it. 1 = I really did not like it.

** Significantly different from present, $p < 0.05$; *** $p < 0.005$; **** $p < 0.0005$

Note: All but the last two vegetables were grown at the school.

Figure 2

Mean Preference Scores of Students Exposed Only to Nutrition Lessons



* 5 = I really liked it a lot. 4 = I liked it. 3 = It was OK. 2 = I did not like it. 1 = I really did not like it.

** Significantly different from present, $p < 0.05$; *** $p < 0.005$

Note: No vegetables were grown at the school.

Appendix B

Application of Nutrition Education Lessons to Selected California Academic Content Standards

GRADE 4

SUBJECT	STANDARD	Lesson								
		1	2	3	4	5	6	7	8	9
English– Language Arts	Reading 1.1 Read narrative and expository text aloud with grade-appropriate fluency and accuracy and with appropriate pacing, intonation, and expression.		✓							
	Writing 1.4 Write fluidly and legibly in cursive or joined italic.	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Listening and Speaking 1.1 Ask thoughtful questions and respond to relevant questions with appropriate elaboration in oral settings.	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mathematics	Number Sense 1.5 Explain different interpretations of fractions, for example, parts of a whole, parts of a set, and division of whole numbers by whole numbers; explain equivalents of fractions. . . .				✓	✓				✓
	3.1 Demonstrate an understanding of, and the ability to use, standard algorithms for the addition and subtraction of multidigit numbers.					✓				
	3.3 Solve problems involving multiplication of multidigit numbers by two-digit numbers.					✓				
	Statistics, Data Analysis, and Probability 1.1 Formulate survey questions; systematically collect and represent data on a number line; and coordinate graphs, tables, and charts.			✓		✓	✓			
	Mathematical Reasoning 2.3 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.				✓	✓				
Science	Life Sciences 2a. Students know plants are the primary source of matter and energy entering most food chains.	✓					✓			
	2b. Students know producers and consumers . . . are related in food chains and food webs and may compete with each other for resources in an ecosystem.	✓								
	2c. Students know decomposers, including many fungi, insects, and microorganisms, recycle matter from dead plants and animals.	✓	✓	✓			✓			
	3b. Students know that in any particular environment, some kinds of plants and animals survive well, some survive less well, and some cannot survive at all.		✓	✓	✓		✓	✓		
	3c. Students know many plants depend on animals for pollination and seed dispersal, and animals depend on plants for food and shelter.	✓	✓			✓		✓	✓	
	Investigation and Experimentation 6b. Measure and estimate the weight, length, or volume of objects.		✓							
	6c. Formulate and justify predictions based on cause-and-effect relationships.	✓			✓		✓	✓		
	6e. Construct and interpret graphs from measurements.			✓						

The matrix identifies the applicable academic content standards that are supported by the lessons.



GRADE 5

SUBJECT	STANDARD	Lesson								
		1	2	3	4	5	6	7	8	9
English– Language Arts	Reading									
	1.1 Read aloud narrative and expository text fluently and accurately and with appropriate pacing, intonation, and expression.		✓							
	2.1 Understand how text features (e.g., format, graphics, sequence, diagrams, illustrations, charts, maps) make information accessible and usable.					✓				
	2.3 Discern main ideas and concepts presented in texts, identifying and assessing evidence that supports those ideas.					✓				
	Listening and Speaking									
1.1 Ask questions that seek information not already discussed.	✓	✓	✓	✓	✓	✓	✓	✓	✓	
1.8 Analyze media as sources of information, entertainment, persuasion, interpretation of events, and transmission of culture.								✓		
Mathematics	Number Sense									
	1.2 Interpret percents as part of a hundred. . . .					✓	✓	✓		
	2.3 Solve simple problems, including ones arising in concrete situations, involving the addition and subtraction of fractions and mixed numbers . . . and express answers in the simplest form.				✓					
	Mathematical Reasoning									
	1.1 Analyze problems by identifying relationships, distinguishing relevant from irrelevant information, sequencing and prioritizing information, and observing patterns.				✓	✓				
	1.2 Determine when and how to break a problem into simpler parts.				✓	✓	✓			
	2.1 Use estimation to verify the reasonableness of calculated results.				✓					
2.3 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.				✓	✓	✓				
Science	Life Sciences									
	2b. Students know how blood circulates through the heart chambers, lungs, and body and how carbon dioxide (CO ₂) and oxygen (O ₂) are exchanged in the lungs and tissues.	✓					✓			
	2e. Students know how sugar, water, and minerals are transported in a vascular plant.	✓	✓							
	2f. Students know plants use carbon dioxide (CO ₂) and energy from sunlight to build molecules of sugar and release oxygen.	✓	✓							
	2g. Students know plant and animal cells break down sugar to obtain energy, a process resulting in carbon dioxide (CO ₂) and water (respiration).		✓							
	Investigation and Experimentation									
	6a. Classify objects (e.g., rocks, plants, leaves) in accordance with appropriate criteria.	✓								
6g. Record data by using appropriate graphic representations . . . and make inferences based on those data.	✓	✓	✓		✓					

The matrix identifies the applicable academic content standards that are supported by the lessons.





GRADE 6

SUBJECT	STANDARD	Lesson								
		1	2	3	4	5	6	7	8	9
English– Language Arts	Reading									
	1.1 Read aloud narrative and expository text fluently and accurately and with appropriate pacing, intonation, and expression.		✓							
	2.1 Identify the structural features of popular media (e.g., newspapers, magazines, online information) and use the features to obtain information.					✓				
	2.3 Connect and clarify main ideas by identifying their relationships to other sources and related topics.					✓				
	Listening and Speaking									
1.1 Relate the speaker’s verbal communication (e.g., word choice, pitch, feeling, tone) to the nonverbal message (e.g., posture, gesture).	✓	✓	✓	✓	✓	✓	✓	✓	✓	
1.8 Analyze the use of rhetorical devices (e.g., cadence, repetitive patterns, use of onomatopoeia) for intent and effect.								✓		
Mathematics	Number Sense									
	2.1 Solve problems involving addition, subtraction, multiplication, and division of positive fractions. . . .				✓					
	2.3 Solve addition, subtraction, multiplication, and division problems, including those arising in concrete situations, that use positive and negative integers and combinations of these operations.				✓	✓	✓			
	Mathematical Reasoning									
	1.1 Analyze problems by identifying relationships, distinguishing relevant from irrelevant information, identifying missing information, sequencing and prioritizing information, and observing patterns.				✓	✓	✓			
	1.3 Determine when and how to break a problem into simpler parts.				✓	✓	✓			
	2.1 Use estimation to verify the reasonableness of calculated results.				✓					
2.4 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.				✓	✓	✓				
Science	Focus on Earth Science									
	5a. Students know energy entering ecosystems as sunlight is transferred by producers into chemical energy through photosynthesis and then from organism to organism through food webs.	✓	✓							
	5b. Students know matter is transferred over time from one organism to others in the food web and between organisms and the physical environment.		✓					✓	✓	✓
	5c. Students know populations of organisms can be categorized by the functions they serve in an ecosystem.					✓			✓	
	Investigation and Experimentation									
7d. Communicate the steps and results from an investigation in written reports and oral presentations.	✓	✓		✓		✓	✓			

The matrix identifies the applicable academic content standards that are supported by the lessons.

Appendix C

Class Quizzes





Lesson 1

1. Which part of the plant pulls water and other nutrients out of the soil?
 - a. The stem
 - b. The leaf
 - c. The seed
 - d. The root
2. Which part of the plant are we eating when we eat spinach?
 - a. The leaves
 - b. The flowers
 - c. The seeds
 - d. The roots
3. Which of the foods noted below is an example of a flower that we eat?
 - a. Carrot
 - b. Broccoli
 - c. Celery
 - d. Mango
4. What is the name of the process in which a plant makes its own food by using air, sunlight, and water?
 - a. Phototropism
 - b. Germination
 - c. Photosynthesis
 - d. Hydrotropism



Lesson 2

1. Which of the following nutrients provides our bodies with energy?
 - a. Protein
 - b. Minerals
 - c. Water
 - d. Vitamins

2. Which of the following nutrients helps our eyes to see in the dark?
 - a. Vitamin C
 - b. Carbohydrates
 - c. Vitamin A
 - d. Water

3. Why do our bodies need calcium?
 - a. To keep our blood healthy
 - b. To keep us from catching a cold
 - c. To help our bones and teeth grow and stay strong
 - d. To help us see in the dark

4. In which nutrient group is iron found?
 - a. Fats
 - b. Minerals
 - c. Vitamins
 - d. Carbohydrates





Lesson 3

1. Which food group does orange juice belong in?
 - a. The vegetables group
 - b. The protein foods group
 - c. The fruit group
 - d. The grains group
2. Which of these foods is in the vegetables group?
 - a. Carrots
 - b. Cheese
 - c. Tortillas
 - d. Chicken
3. Which food group provides our bodies with a lot of calcium?
 - a. The fruit group
 - b. The dairy group
 - c. The vegetables group
 - d. The fats and sugars group
4. Which food is in the protein foods group?
 - a. Peanuts
 - b. An apple
 - c. Rice
 - d. Tomato juice
5. From which food groups should we make half our plate?
 - a. The dairy group
 - b. The fruit and vegetables groups
 - c. The protein foods group
 - d. The grains group
6. From which food group should we eat the fewest servings every day?
 - a. The fruit group
 - b. The fats and sugars group
 - c. The grains group
 - d. The protein foods group



Lesson 4

1. What is the minimum number of servings of fruits and vegetables you should eat each day?
 - a. 0 servings
 - b. 2 servings
 - c. 5 servings
 - d. 8 servings
2. Imagine putting one cup of salad on a plate. If you did this, your salad would look about the same size as:
 - a. Two ping-pong balls
 - b. A baseball
 - c. A deck of cards
 - d. A soccer ball
3. If you eat one medium apple for lunch, how many servings of fruit are you eating?
 - a. A half of a serving
 - b. One serving
 - c. Two servings
 - d. Three servings





Lesson 5

1. What do calories measure?
 - a. The time that it takes to eat lunch
 - b. The length of a hot dog
 - c. The energy that food gives our bodies
 - d. The weight of a slice of pizza

2. Which food will provide your body with more energy?
 - a. Food A
 - b. Food B

3. How many more grams of protein are in Food B than in Food A?
 - a. 0 grams
 - b. 1 gram
 - c. 3 grams
 - d. 5 grams

Food A

Nutrition Facts	
Serving Size 1 Cup (300g)	
Servings Per Container 12	
Amount Per Serving	
Calories 110 Calories from Fat 30	
% Daily Value*	
Total Fat 3g	5%
Saturated Fat 1g	5%
<i>Trans</i> Fat 0g	
Cholesterol 12mg	4%
Sodium 200mg	8%
Total Carbohydrate 12g	4%
Dietary Fiber 0g	0%
Sugars 12g	
Protein 8g	
Vitamin A 5%	• Vitamin C 0%
Calcium 25%	• Iron 8%
* Percent Daily Values are based on a 2,000 calorie diet.	

Food B

Nutrition Facts	
Serving Size 1 Cup (300g)	
Servings Per Container 12	
Amount Per Serving	
Calories 185 Calories from Fat 90	
% Daily Value*	
Total Fat 9g	14%
Saturated Fat 6g	30%
<i>Trans</i> Fat 0g	
Cholesterol 40mg	13%
Sodium 200mg	8%
Total Carbohydrate 13g	4%
Dietary Fiber 0g	0%
Sugars 13g	
Protein 11g	
Vitamin A 4%	• Vitamin C 0%
Calcium 20%	• Iron 8%
* Percent Daily Values are based on a 2,000 calorie diet.	



Lesson 6

1. If you measure your pulse, you will find out:
 - a. How many times your heart beats in one minute.
 - b. What color your shoes are.
 - c. How much water you drank with lunch.
 - d. How much you weigh.
2. What should you do before you exercise?
 - a. Take a nap.
 - b. Eat a lot of candy.
 - c. Drink a glass of water.
 - d. Do nothing—you can just start exercising.
3. Which of the following is a type of aerobic exercise?
 - a. Stretching
 - b. Lifting weights
 - c. Running
 - d. Doing push-ups
4. What type of exercise am I doing when I pick up a heavy shovel while working in the garden?
 - a. A mental exercise
 - b. An anaerobic exercise
 - c. An aerobic exercise
 - d. It is not any type of exercise at all.





Lesson 7

1. When should you eat a variety of foods?
 - a. Just at breakfast
 - b. Just at lunch
 - c. Just at dinner
 - d. All day long
2. Which of the following is a low-fat healthful snack?
 - a. Chocolate chip cookies
 - b. French fries
 - c. Pretzels
 - d. A candy bar
3. Which of the following is an example of being physically active?
 - a. Taking a nap
 - b. Riding a bike
 - c. Watching TV
 - d. Riding in a car



Lesson 8

1. What might a company do to get you to buy its food product?
 - a. Tell you that the food tastes bad.
 - b. Lower the cost of the food.
 - c. Give you a free toy when you buy the food.
 - d. Make the food smell funny.



Lesson 9

Use the following information to answer the two questions noted below.

For lunch, a young student ate:

2 slices of whole wheat bread

2 tbsp. of peanut butter

1/2 cup sliced banana

1/2 cup carrot sticks

1 cup of applesauce

1 cup of nonfat milk

1. From how many different food groups did this student eat during lunch?
 - a. One food group
 - b. Three food groups
 - c. Five food groups
 - d. Six food groups

2. How many ounces of the grains group will this student need to eat to meet the minimum amount recommended?
 - a. Two
 - b. Four
 - c. Six
 - d. Nine



Class Quizzes—Answer Key

Lesson 1

1. d
2. a
3. b
4. c

Lesson 2

1. a
2. c
3. c
4. b

Lesson 3

1. c
2. a
3. b
4. a
5. b
6. b

Lesson 4

1. c
2. b
3. b

Lesson 5

1. c
2. b
3. c

Lesson 6

1. a
2. c
3. c
4. b

Lesson 7

1. d
2. c
3. b

Lesson 8

1. c

Lesson 9

1. c
2. c

Appendix D

Nutrition Education Resources

Academy of Nutrition and Dietetics Association

Toll-free telephone number: 1-800-877-1600, <http://www.eatright.org/>

California Certified Farmers Markets

The Web site provides locations and dates when farmers sell their crops directly to the public.

<http://www.cafarmersmarkets.com/index2.html>

California Department of Education

A helpful online document produced by the California Department of Education is available free of charge: Nutrition Education Resource Guide, <http://www.cde.ca.gov/ls/nu/he/documents/nergcomplete.pdf>

CDE Press, Sales Office, 1430 N Street, Suite 3705, Sacramento, CA 95814

Toll-free telephone number: 1-800-995-4099 (8 a.m. to 4:30 p.m., Pacific time), Fax number: 1-916-323-0823,

Contact CDE Press to purchase the following item: Fresh Fruit and Vegetable Photo Cards (Item no. 1365)

California Foundation for Agriculture in the Classroom

This nonprofit organization works with teachers in kindergarten through grade twelve, community leaders, media representatives, and staff in government agencies to enhance education by using agricultural examples. Educational lessons and resources are available.

<http://www.learnaboutag.org/>

California Healthy Kids Resource Center

The Healthy Kids Resource Center is funded by the California Department of Education and houses a comprehensive collection of health education resources. Teachers, administrators, parents, and other educators working with students from pre-school to high school may borrow these materials at no cost. The center's goal is to promote health literacy among California students.

<http://www.californiahealthykids.org>

E-mail address: chkrc@californiahealthykids.org, Toll-free telephone number: 888-318-8188



Dairy Council of California

The council offers free nutrition education curricula for grades kindergarten to grade twelve. It is aligned with the California state education content standards. Lessons use a behavior-change model. A teacher training program is available free of charge online.

<http://www.dairycouncilofca.org>

1101 National Dr., Suite B, Sacramento, CA 95834-1945

Toll-free telephone number: 877-324-7901

Life Lab Science Program

The Life Lab supports science and garden-based education through publications, professional development, and related programs.

<http://www.222.lifelab.org>

UC Cooperative Extension

This Web site serves as a point of contact to small farms throughout California.

<http://www.ucanr.edu>

U.S. Department of Agriculture

The USDA Web site provides resources on health and nutrition, including information about MyPlate, an online tool called the Supertracker to help users plan, analyze, and track their diet and physical activity; and materials that can be downloaded and printed for distribution in classrooms.

<http://www.USDAChoosemyplate.gov>



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