

Lesson 6: The Global Garden

TOTAL TIME REQUIRED: 140 minutes / 3 sessions

Session 1: Getting Started 10 min;

Activity I “Fruits and Vegetables Around the World” 40 min (Social Studies/Health)

Session 2: Activity II “Global Recipes”

20 min (English Language Arts/Health);

Activity III “Tasty Chickpeas” 40 min (Health)

Session 3: Activity IV “Garden Pen Pals”

20 min (English Language Arts);

Reflect 10 min

LESSON OVERVIEW:

In this lesson, students will explore culinary traditions and how fruits and vegetables are grown and cooked around the world and throughout the United States. They will learn about global gardening and how other languages have contributed to our culinary vocabulary.

ESSENTIAL QUESTIONS: *What fruits and vegetables are grown near me?*

What are some of the different fruits and vegetables grown around the world?

How can I eat a fruit or vegetable in different ways?

ADDITIONAL SUPPLIES:

Potato masher or mortar and pestle (or blender/food processor), colander, large bowl, large spoon for stirring, tablespoon for serving, measuring cup and spoons, can opener

ADDITIONAL INGREDIENTS FOR HUMMUS RECIPE:

Recipe on p. 80 serves 8; adjust as needed: cans of chickpeas (rinsed and drained), water, garlic cloves, olive oil or other vegetable oil, lemon juice, salt and pepper, whole-wheat pita breads (cut into triangles), a variety of rinsed and raw vegetables cut into sticks (for example, zucchini, cucumber, carrots).

Optional: paprika, tahini*



***Allergy Alert!** *Tahini contains sesame seeds. As noted on p. 2, ask parents to provide information about any food allergies before any class food preparation activities. You may wish to provide parents with a copy of the recipe ahead of time.*

TEACHING PROCEDURE:

GETTING STARTED (10 minutes)

1. Begin by telling students they will explore what influences their food choices. Ask them to reflect on the following questions in their **Garden Journals**. *How do I decide what to eat? Do I stick to the same foods? How often do I try new foods? What fruits and vegetables do I eat most often? What is the most interesting new food I've ever tried?*
2. Invite students to share their responses and guide a discussion by asking if students decide what to eat based upon: how they know a food will taste, what is available at home or school, a commercial they liked about the food, its attractive packaging, because their friends are eating it, or something else. Ask students to think about what other influences may affect their choices.
3. Ask if students ever tried something new and discovered that they liked it. Invite volunteers to share their stories.

Key Message:

Explore the world of possibilities in the garden and on your plate.

Subject Connections:

English Language Arts, Math, Science, Social Studies

Learning Objectives:

Students will be able to...

- Explain how an environment influences the type of fruits and vegetables that are grown and eaten in a region/culture.
- List ways fruits and vegetables grown in the school garden are prepared and eaten in different regions of the United States and the world.
- Describe various units of measurement used to communicate quantities in a recipe (such as serving sizes and ingredient amounts).
- Identify vegetables that are part of the **Beans and Peas Vegetable Subgroup**.
- Identify three ways chickpeas (garbanzo beans) can be eaten as part of a meal.

Supplies:

- Plastic gloves, apron, bowl, spoon, napkin (per student)
- Access to sink with warm, running water and soap
- Cookbooks, recipes (featuring a variety of cultures, global recipes)
- Art supplies, paper/poster board
- World map, atlas
- **Garden Journals**
- Student handouts (pp. 80-81):
 1. **Tasty Chickpeas**
 2. **Garden Pen Pals**
- **Dig In!** poster – **Race Car**
- Optional: Computer access, Internet

Featured Fruits and Vegetables:

Chickpea (Garbanzo bean)

Provide enough dry samples for students to observe.



GLOBAL FOOD STORIES (SOCIAL STUDIES/ENGLISH LANGUAGE ARTS)

Have students research different food stories from their region. (For example, students can use a search engine to find “food news in India” or “children and food in Virginia.”) Encourage students to read a few of the articles presented to learn if anything interesting is happening in their chosen region involving fruits and vegetables. They may be surprised at how often the world thinks about the simple foods they eat every day.

DIG DEEPER!



Have students map and chart what foods are grown in which U.S. and global region. As a further extension, have students check and identify which items can be found in local markets. Repeat the mapping activity in Lesson 2 (p. 21) to calculate the distances of their favorite fruits and vegetables.

EXPLORE CULINARY TRADITIONS (SOCIAL STUDIES)

Culinary traditions, like ingredients and flavors, vary around the country and the world. Some European countries traditionally serve their salad after the meal instead of before like in most American restaurants. Some cultures serve sorbet between courses to cleanse the palate. Other cultures have their meals extend for a very long time, rather than eat “fast food.” Culinary utensils also vary. Some cultures eat with their hands or chopsticks, or use plates made of large leaves. Have students further explore their assigned geographical regions to find out more.

LEARNING ACTIVITIES

Activity I. Fruits and Vegetables Around the World (40 minutes, Social Studies*/Health)

***See sidebars on this page and next for additional Social Studies connections.**

1. Divide the class into teams of three and assign each group to a different geographical area. Have each team choose a specific fruit or vegetable to investigate from the list below. Encourage each team to choose one that is not so familiar.

Note: *This is not a complete list.*

U.S., Northeast

Fruits: Wild blueberry, cranberry, raspberry, apple

Vegetables: Beans (for example, navy bean), kale, pumpkin, broccoli

U.S., Southeast

Fruits: Peach, orange

Vegetables: Dark-green vegetables (for example, collard, turnip, or mustard greens), beans (for example, black-eyed pea, pinto bean, butter bean, sweet potato)

U.S., Midwest

Fruits: Apple, cranberry

Vegetables: Corn, soybean

U.S., Northwest

Fruits: Apple, grape

Vegetables: Black bean, soybean, pea, potato, turnip

U.S., Southwest

Fruits: Citrus, grape

Vegetables: Spinach, artichoke, leaf lettuce, cauliflower, pea, squash, green pepper, tomato, onion

MEXICO

Fruits: Pineapple, papaya, guava, prickly pear, pitahaya fruit, melon

Vegetables: Beans (for example, pinto bean or black bean), pepper, tomato, plantain, avocado, jicama

CHINA/JAPAN

Fruits: Citrus fruit, litchi, peach, persimmon, Asian pear

Vegetables: Beans (for example, soybean), dark-green vegetables (for example, bok choy), mushroom, yam, taro, pea, bamboo, giant radish (daikon)

INDIA

Fruits: Mango, banana, Indian gooseberry, citrus fruit, coconut, papaya, starfruit

Vegetables: Beans (for example, lentil, chickpea, black-eyed pea), carrot, cauliflower, green bean, green pepper, okra, gourd, taro, potato, cabbage

MIDDLE EAST/ NORTH AFRICA

Fruits: Pomegranate, fig, walnut, quince, date, cherry, apricot, grape

Vegetables: Eggplant, chickpea, asparagus, okra, leek, moulikhiyya

CENTRAL/SOUTH EUROPE (FRANCE, ITALY)

Fruits: Apple, cherry, peach, nectarine, pear, rhubarb, plum, grape, orange, tangerine, strawberry, apricot, melon, persimmon

Vegetables: Tomato, beans (for example, chickpea, fava bean, cannellini bean, lentil), dark-green vegetables (for example, spinach, Swiss chard, broccoli), endive, carrot, beet, turnip, radish, cucumber, asparagus, zucchini

Sources: P. Kittler and K. Sucher, *Food and Culture*, 5th edition, Belmont, CA: Thomson Wadsworth, 2008; Food and Agricultural Organization of the United Nations (<http://www.fao.org>); U.S. Environmental Protection Agency (<http://www.epa.gov/oecaagct/ag101/cropmajor.html>); USDA (<http://planthardiness.ars.usda.gov>)

2. Ask each group to explore the reason for using specific ingredients. For example, why are some ingredients used in certain geographic areas or cultures? Why do many Asian dishes incorporate rice or soybeans? Why do recipes from Central American countries include beans, corn, and cilantro? Why do Mediterranean dishes use olives, grapes, and tomatoes? (*These foods grow abundantly in those regions.*) Allow students to share their answers. Explain that spices and herbs can vary by country (for example, cumin, garlic, mint, basil, and cilantro) and can be a tasty way to add flavor to food without using as much salt.



Teacher Tip! Connect this activity to the topic of ancient civilizations.

See Lesson 4 (p. 33) for more ways to tie the garden to this topic.

3. Explain that long before our world was as connected as it is today, before airplanes could transport foods across continents quickly, people ate only what could be grown in their region. Today, we can try ingredients from all over the world because these foods can reach us before they spoil. But various cultures and regions still prepare traditional foods because they are familiar, delicious, and an important part of their culture.
4. Ask students to also consider why some recipes are traditionally associated with certain seasons. For example, in the United States, why are peaches used in summer recipes? Why are sweet potatoes and cranberries often featured in the fall, or at holidays like Thanksgiving? Why do some towns have strawberry festivals in the spring? (*In the U.S., those are the times when these fruits and vegetables are usually in season, which means they are more plentiful, cost less, and taste the best.*)
5. Have students research their fruit or vegetable using encyclopedias, cookbooks, and other library or online reference tools. What interesting facts can they find out about their assigned food? How does it grow and how is it prepared in their assigned geographic region? For example, **falafel** is a Middle Eastern specialty in which ground chickpeas are combined with spices, shaped into balls or patties, and then fried.
6. Students will next create an international “passport” for their fruit or vegetable. They should include a photo or drawing of the food, where it is grown, where it travels (export/import), and additional fun facts. Encourage them to think creatively about what can be learned of the region in which their food is found. The origin of fruits and vegetables offers fascinating research!

Activity II. Global Recipes (20 minutes, English Language Arts/Health)

Prepare: Provide students with access to international and regional cookbooks, recipes (featuring chickpeas/garbanzo beans), and/or access to the Internet. Have enough dry chickpeas for each student to observe.

1. Ask students: *Have you ever eaten a chickpea, or a food made from chickpeas? In what form? What plant part are they? (Seed) What vegetable subgroup do they belong to? (Beans and Peas)* Explain that they may also be called “garbanzo beans.”

LOCAL NATIVES (SOCIAL STUDIES)

Have **Garden Teams** explore and research what grows in and around your region. What is a local native fruit or vegetable? Find out by visiting or talking to a farmer. Is one of the Three Sisters (corn, squash, and pole beans – which are native to America) growing at a farm near you? (See Lesson 5 for more on companion planting.)

KITCHEN CHIT-CHAT (ENGLISH LANGUAGE ARTS)

Al dente, croques monsieur, jambalaya, fondue, mince, julienne, sauté, blanche, flambé!

Students may come across unfamiliar culinary terms as they browse through recipes. Compile a list of new vocabulary words (foods, ingredients, equipment, techniques) and then divide them among students to research.

What they discover may surprise them! Take the meaning and origin of the word “**sauté**” for example. Did you know it is French for “jump?” Quite different from a Southeast Asian “**satay**.”

Have students create trivia questions based on what they learned and use their newfound culinary vocabulary to challenge another class.

GARDENS AROUND THE WORLD (SOCIAL STUDIES)

In Africa, gardeners struggle with long periods of drought. Some farmers use a **Keyhole Garden** to solve this problem. They plant their vegetables in a raised bed the shape of a keyhole (a long column with a circle at one end). There is a heap of compost in the center of the circle. The farmer waters the compost with recycled water which filters through the compost. The water moves down the keyhole, bringing both water and nutrients to the fruits and vegetables planted along the way.

In New York City, the tops of the skyscrapers are sprouting **rooftop gardens**! These gardens offer more than delicious local fruits and vegetables; the plants absorb rainwater, which solves the problem of too much water flowing into the city's sewers at one time. The plants also help insulate the buildings from extreme heat or cold.

In Southeast Asia, **rice paddies** can be built into steep hillsides as terraces and can be planted next to marshes or rivers. When the paddies are flooded, the rice can grow easily but weeds are discouraged. The water buffalo is well suited to working in wetlands and is used frequently in paddy fields.

In Mexico, **chinampas**, or "floating gardens," were built by ancient Aztec Indians in shallow lake beds. The gardens were layered with mud and decaying vegetation until the garden rose above the level of the lake. The gardens were in small rectangles separated by channels just wide enough for a canoe to pass. These "islands" had very high crop yields with up to seven crops a year.

2. Distribute the handout **Tasty Chickpeas** (p. 80). Pass around dry chickpea samples so that each student gets one to touch and observe. Explain that chickpeas are harvested from the seedpod of a chickpea plant. Show them an example of a chickpea plant in the garden (if growing) or on the handout.

3. Explain that the chickpea is a small, round bean with a mild, nutty flavor. They are the seed of the plant and grow inside a pod usually 1 inch long and 1 inch wide (similar to the size of a quarter). They are grown throughout the Middle East, India, Turkey, Africa, and the United States. The bushy plant with feathery leaves grows to about 18 inches tall and has either white or violet-colored flowers depending on the variety. The chickpea itself can vary in color from dark green to a light brown when harvested. When harvested from the garden, chickpeas are first dried, then the outer thin shell is peeled off. You can buy them at the grocery store dried or canned. Before cooking, dried beans are soaked in water to soften the beans and reduce cooking time. One way is to soak the beans overnight. The beans are then drained, rinsed, and cooked in fresh water. Canned beans have already been soaked and cooked. They are often drained and rinsed before using them in a recipe.



4. Explain that there are lots of tasty ways chickpeas are prepared and eaten around the globe. Have students search online for recipes that contain chickpeas. For instance, try the **Recipe Finder** at <http://recipefinder.nal.usda.gov/> or the **Recipes for Healthy Kids Cookbook** at http://www.teamnutrition.usda.gov/Resources/recipes_for_healthy_kids.html. **Note:** If your class is not able to search for recipes, you may complete steps 5-7 using the *Happy Hummus Recipe* on the student handout.

5. Ask students to identify the key elements required in a recipe (name of recipe, amounts of ingredients, preparation time, equipment, cooking instructions, and number of servings). List these on the board. Discuss the purpose of this information. What happens if something is missing? (For example, without proper measurements for each ingredient, the dish may not taste the same each time.) What other features make a recipe seem enticing? (*Color photographs? Illustrations? Simplicity?*) Add these to the list on the board.

6. Next, each group will decide on one chickpea recipe to examine. First, have students study the ingredients. Ask: *What other fruits or vegetables are featured? Does the recipe include spices? Are there any ingredients you don't recognize? Can the ingredients be found in the school garden or local market?*



7. As a final journey in their culinary explorations, have students share and present their chickpea recipes in a visual display with a world map. Hang this in the cafeteria or school hallway to share the international adventures with the rest of the school.

Activity III. Tasty Chickpeas (40 minutes, Health)

 ***Allergy Alert!** Tahini (sesame seed paste) may be a food allergen for some children. If needed, you may omit tahini as an ingredient. See p. 2 for more information about food allergies.

Prepare: If you have a school garden and are growing chickpeas, try this hummus recipe with chickpeas harvested from your garden. (🌱 p. 104) If not, you may use dry (and prepared) or canned (rinsed and drained) chickpeas. See the recipe on the student handout (p. 80) for all ingredients and equipment needed. Set up a prep station for a group of four to six students with all of the supplies required, including bowls of chickpeas. Each group should prepare its own recipe. Provide plastic gloves, a plate or bowl, spoon, and napkin for each student. Also prepare additional foods to eat with the hummus (such as sticks of zucchini, bell peppers, carrots, or cucumbers; whole-wheat pita bread). You can also customize hummus by adding red bell peppers, zucchini, or herbs from the garden.

1. Explain to students that in this activity, they will learn about chickpeas and prepare a recipe for hummus provided on the student handout **Tasty Chickpeas**.
2. Before students begin the food preparation, have them wash their hands, reminding them of the proper procedure (see sidebar). Next, divide the class into groups of four to six students. Have students read through the instructions and check that they have all the ingredients to make the recipe at their food preparation stations. Go over any questions. **Note:** You may choose to demonstrate and ask for student volunteers to help you instead of having students work at different stations.
3. Give students 20 minutes to prepare their recipes. They should put on disposable plastic gloves before they handle any food. When the recipe is complete, serve in a bowl garnished with paprika. Explain that this is the traditional garnish for the Middle Eastern dish. Give each student a plate and invite each student to dig in and taste the hummus with different veggie slices and pita bread. Ask them to share what they think about the flavor, texture, and combinations. What are some ways they can eat chickpeas at home?
4. Have students clean up their stations following proper procedures (see p. 4). Cover and refrigerate any leftover hummus, and use within 1 to 2 days.

Activity IV. Garden Pen Pals (20 minutes, English Language Arts)

1. To complete their culinary exploration, distribute the handout **Garden Pen Pals** (p. 81) to each student. Explain that they will write to a student in another part of the country or the world in an effort to discover new foods and traditions.
2. Visit the **U.S. Department of Agriculture's Team Nutrition** Web site to find other Team Nutrition schools in other areas: <http://teamnutrition.usda.gov/database.html>. Connect by emailing, writing letters, or using online video-chat software to allow your students to connect with their pen pals face to face.

REFLECT (10 minutes)

1. Have students reflect in their **Garden Journals** on the following questions: *What did I learn in this lesson? What makes me more willing to try a new food? What keeps me from trying something new? What can I do to make fruits and vegetables more interesting?*

IMPORTANT FOOD SAFETY STEPS!

Please see p. 4 for a reproducible handout to post in a visible location in your classroom. It is important that you follow these steps to keep yourself, your students, and any parents or volunteers safe and healthy.

Hand Washing:

All persons participating in the food preparation activity (teachers, students, volunteers, parents) should wash hands before and after preparing, handling, or sampling foods.

EXTENSIONS

Global Garden Cookbook

Compile your students' recipes into a class cookbook featuring global (and regional) fruits and veggies, or chickpeas, prepared in different culinary and cultural ways. Include fun facts students found on each fruit or vegetable, their illustrations or images ("passports"), a glossary of new vocabulary words, and their reflections. Print copies of the cookbook for each student to bring home to their families, or include it alongside fruits and vegetables at a "Garden Sale" (if your school and local health department policies allow). Use the proceeds to help maintain your school garden!

World Fruit and Veggie Day

Work with your school district's Food Service Director to plan school lunch menus with an international or regional theme. Share what your students found in their research on ways other countries might prepare chickpeas, and other fruits and vegetables.