

Eating from the Garden

One Bite Lessons: Easy and Edible

Overview

“One Bite Lessons” are edible activities that don’t require a kitchen or excessive preparation. They are fun and creative ways to sample plants right from the garden.

Harvesting food straight from the garden is a powerful act. For many kids the school garden is the only place they will experience eating “straight off the vine.” Students who harvest straight from the garden are often more adventurous and try food they might not sample otherwise. Use this time to explore the garden and show students what is good to harvest in the garden. Remember to follow safe hand and produce washing practices. If garden production is low consider supplementing the garden harvest with produce from the farmer’s market or store.

Logistics

Recommended Grade Level: Pre-K to 12

Season: Any

Location: Garden with edible plants

Time required: About 10-30 minutes

Suggested Materials

Depending on what you are harvesting you might consider

- Harvest baskets or bags
- Cutting board or plate
- Knife
- Cloth napkin or paper towels
- Hand shears or scissors
- Appropriate seasoning such as lemon or lime, hot sauce, dressings
- Store bought produce if needed

Supplies for hand and produce washing

- Spray bottles for rinsing veggies
- Colanders to set on top of buckets for rinsing veggies
- Hand sanitizer or wipes if there are no sinks for hand washing

Food Safety

Outdoor sink areas are very useful for any edible garden project. If possible, several faucets and multiple sinks will speed up hand and produce washing. Make this a priority as you are developing your garden plans.

However, you can enjoy safe, clean produce even without a sink, if you keep in mind a few simple but important steps and concepts:

- 1) Check that the water used in your garden is safe for drinking.
- 2) Veggies and fruits always need to be washed with *running* water, meaning that water needs to freely flow off of the surface of the produce to remove germs and contaminants.
- 3) Do not use soaps to wash produce.
- 4) For root crops with dirt on the surface such as carrots, you can first scrub and rub the produce in a bucket or sink of standing water to remove the visible dirt. *Then* complete the last produce wash under running water.
- 5) If you don't have a sink, the run-off from produce washing efforts should be collected or channeled or you'll quickly end up with weedy, muddy patches in your garden.
- 6) Handwashing needs to be under running water. Children should not share standing water for any step in handwashing.
- 7) Use biodegradable hand soap so that handwashing water can be collected and used in the garden.
- 8) Hand Sanitizer is an effective alternative if clean running water is not available.

The following are some suggestions for cleaning produce and hands when you don't have sinks.

Hand washing without a sink	Produce washing without a sink
<ul style="list-style-type: none">• A large water dispenser with a spout set on a table or chair. One student holds the spout open while another student washes his/her hands. Place bucket or dishpan underneath to catch the run-off.• Wet hands with spray bottles. Rub, soap, and rinse with hose held over a bucket, a garden bed, or at the base of a fruit tree that needs water.• Hand Sanitizer	<ul style="list-style-type: none">• Place a colander of produce on top of a bucket, rinse produce with hose letting water run off and collect in the bucket.• Use spray bottles to drench produce. Rub surface, then rinse with running water.• For berries, cherry tomatoes, peas, or edible flowers, use a fan sprayer attached to a hose to thoroughly rinse the produce on the vine before picking.

Activities

The following are examples of one bite lessons. Share your own One Bite Lessons and see others at www.csgn.org/blog/2012/07/30/one-bite-lessons

Bubblegum Kale: Sandwich a piece of spearmint inside kale. Chew and enjoy.
Invented by Samantha, age 4, Berkeley, CA.

Lettuce Buffet: Harvest several different kinds of lettuce, wash it, put a little bit of each kind on a plate. Sample all the various lettuces, without the salad mess.
Contributed by Chase Avenue Elementary, El Cajon, CA.

Flavored Water: Add crumpled mint leaves to your water bottles or glasses of water. Shake or stir, enjoy the minty goodness. Also try with other herbs or fruits. Sliced strawberries, cucumbers, lemon verbena leaves, citrus slices, or lemon balm leaves are all good options. *Contributed by CAFF's Central Coast Farm to School Program, Watsonville, CA.*

One Bite Salsa: Harvest a pepper and snip off some onion greens. Have kids harvest a couple of cherry tomatoes. Break pepper into pieces, tear up small pieces of onion greens. Eat cherry tomato, pepper piece, and a bit of onion in one bite.
Contributed by the Life Lab Garden Classroom, Santa Cruz, CA.

Flower Feast: Discuss which flowers in the garden are edible. Harvest a variety of edible flower and eat a mini bouquet or go on a floral walk sampling different flowers as you pass them. *Contributed by the Life Lab Garden Classroom, Santa Cruz, CA.*

Six Plant Part Burrito: As a group harvest edible roots, stems, leaves (large ones like roman lettuce), flowers, fruits, and seeds. Wash veggies. Use a cutting board or plate and cut plant parts up in small pieces (minus the large edible leaf part). Have kids fill their leaf up with samples of each plant part. Roll up your "burrito" and munch on down or sample each part separately. Also known as Six Plant Part Tacos, Finger Salads, and many other creative names. *Contributed by the Life Lab Garden Classroom, Santa Cruz, CA.*

A Taste of Nectar: Use a variety of edible flowers in the garden. Have a discussion about flowers, nectar and pollinators. Have the children observe the insect activity in the garden and ask questions. Then introduce plants with edible flowers. Borage works great. Give each child a borage flower. Have them gently remove the pistil of the flower and lick the nectar from the receptacle. Also try plants like cilantro and radishes that have bolted. With cilantro flowers, have the children "dab" the flower on their tongue and see who can taste the nectar! And don't forget, all these flowers can be eaten too! *Contributed by St. Cornelius School, Long Beach, CA.*

Sour Face: Harvest lemons, rhubarb stems (leaves are toxic to eat), or other sour tasting plants. Eat and watch the sour faces show up. *Contributed by the Life Lab Garden Classroom, Santa Cruz, CA*

Pick a Salad Day: Take the class out to the garden with a spray bottle filled with water. Each student team has a plate and napkins. They harvest their vegetables, wash them with the water bottle and sit down for a salad party. They will try things they have never eaten before just because they grew it and picked it. Swiss Chard is a favorite. *Contributed by Bethune Academy.*

Additional free online resources about Eating from the Garden

Vegetable Planting and Harvesting Tips

A four page handout take from Life Lab's *The Growing Classroom* which summarizes planting care and harvest tips for 32 crops.

<http://csgn.org/sites/csgn.org/files/Vegetable%20Planting%20&%20Harvest%20Tips.pdf>

Food Safety Tips for School Gardens

A six page handout from the National Food Safety Management Institute

<http://nfsmi.org/documentlibraryfiles/PDF/20110822025700.pdf>

National Gardening Association's Food Gardening Guide

Provides details on growing and harvesting edible crops.

<http://www.garden.org/foodguide/browse>

Share your "One Bite" lessons and see others

at www.csgn.org/blog/2012/07/30/one-bite-lessons

Feeling Fine with Fresh Foods Teacher Packet "Six Plant Parts" lesson, pp.17-18

<http://www.lifelab.org/2012/02/feeling-fine-with-fresh-foods-lesson-packet/>

Dress a student as a plant while learning basic botany and edible plants parts. This is a nice activity to do before a garden harvest walk.

6 Plant Part Skit See a video at **Life Lab's**

YouTube www.youtube.com/user/lifelabvideos, view or directly at

<http://youtu.be/8R7fVI7esZE>

Food for Thought

- Can you see doing these lessons with your students?
- How might you modify it to work in your garden?
- How might you connect these activities to nutrition education?
- What other ways have you practiced safe food handling and hand washing in the garden?



Food Safety Tips for School Gardens

Schools across the nation are using gardens to help children discover where food comes from and to develop healthy eating habits. Gardens provide a way for children to grow, harvest, prepare, and ultimately taste new fruits and vegetables. When appropriate precautions are taken fruits and vegetables from school gardens can be served safely to students. Before starting a school garden, check with your local health department about their policies on serving food grown in gardens in school meals.

Potential food safety risks should be taken seriously. Produce grown in gardens can be contaminated during growth, harvest, transportation, preparation, or service and result in foodborne illness. The practices addressed in this document will help program operators enhance the safety of fruits and vegetables grown in school gardens.

Produce grown in school gardens may also be served in classrooms. These food safety tips are also applicable for produce served in classrooms. For additional tips, see *Handling Fresh Produce in Classrooms*.

Site Selection, Materials, and Water Use

- Locate gardens away from potential contamination sources (garbage, utilities, animals, water runoff, flooding, septic systems, etc.).
- Contact the utility companies or call 811, the national “Call Before You Dig” number, a few days before digging to ensure that you avoid gas or electric lines.
- Identify soil history from all sources. Have soil tested to determine levels of contaminants such as chemicals, pesticides, lead, etc., especially if located near high-traffic zones. Contact your local Cooperative Extension Office for information on soil testing services available in your area.
- Create reasonable barriers to keep wild animals away from the garden. Examples include fencing or cages over produce items such as strawberries, leafy greens, etc.
- Consider purchasing soil that has been commercially packaged and labeled for growing food crops. Soil purchased from a commercial source ensures traceability.
- Use non-toxic, non-leaching materials for raised-bed gardens, containers, stakes, or trellises. Do not use pressure-treated wood, used tires, single use plastics, old railroad ties, etc.
- Select non-allergenic and non-toxic plants. Check with your local Cooperative Extension office if you need assistance determining plant safety or toxicity.





Food Safety Tips for School Gardens, continued

- Test all water sources annually, except municipal sources, for potentially harmful organisms, such as fecal coliforms, to make sure they meet the standards of the Environmental Protection Agency (EPA). Test water collected in cisterns. Contact your local Cooperative Extension Office for assistance.
- Maintain water testing records.
- Use food grade containers to transport water.

Chemical and Fertilizer Use

- Do not use any pesticides or herbicides due to potential health hazards to children.
- Check with your county Cooperative Extension Office for the best non-chemical method of control for local pest problems.
- Read and follow the manufacturer's instructions when using fertilizer.
- Secure all fertilizers in a safe and locked location when not in use.
- Allow only adults to handle fertilizers.
- Check with your local health department about applicable Occupational Health and Safety Administration (OSHA) hazard communication requirements. Maintain Material Safety Data Sheets (MSDS) as required. More information is available at: <http://www.osha.gov/dsg/hazcom/index.html>.
- Maintain information on safe use and potential hazards that is available on product labels or from the manufacturer, for all fertilizers.
- Label the container with the common name of the fertilizer if transferring fertilizers into a dispensing container. Never use a food container.
- Dispose of fertilizer and its containers according to the manufacturer's instructions.

Compost and Manure Use

Composting is a highly complex process that requires strict attention to specific procedures and conditions. This fact sheet summarizes key points, but is not comprehensive. Contact your local Cooperative Extension Office, or a composting expert for assistance.

- Avoid the use of raw manure, as it may increase the risk of contamination from pathogens.
- Use of composting manure in school gardens is not recommended due to increased risk of contamination from pathogens that are not completely destroyed. Contact your Cooperative Extension Office to ensure that proper procedures are followed if you plan to compost manure for a school garden.
- Consider purchasing traceable, commercially prepared compost, if manure-based compost is desired.
- Consider using worms to form vermicompost. Learn about vermicomposting at: <http://www.bae.ncsu.edu/topic/vermicomposting/>.



Food Safety Tips for School Gardens, continued

- Add only plant products, such as fresh fruit and vegetable culls from food production (apple and pear cores and vegetable trimmings), to a school compost pile. Other plant material, such as grass clippings, leaves, and twigs also can be added to fruit and vegetable clippings.
- Do not use animal products, animal waste, or any cafeteria waste in a compost pile, as it might contain animal products. Harmful pathogens might be introduced through animal products and must be properly managed to ensure their destruction.
- Wear gloves when handling compost material.
- Locate the compost pile in a secure location away from potential contamination, such as garbage, water runoff, etc. Restrict access by animals as much as possible.



Growing and Harvesting Produce

A school garden provides an opportunity for children and volunteers to learn about how to handle food safely. The following are some food safety tips to follow when growing and harvesting produce.

- Ensure that all persons, including staff, students, and volunteers receive basic food and gardening safety training instructions according to local health regulations. The following topics are recommended:
 - ◆ Handwashing and personal hygiene
 - ◆ Cleaning and sanitizing garden equipment and containers used to hold produce
 - ◆ Handling produce during harvest, washing, and transportation
 - ◆ Glove use
- Ensure that volunteers are covered by the school district insurance policy in the event of accident or injury.
- Require signed permission slips for all student gardeners. Permission slips should list potential hazards of working in a school garden and identify any allergies the child may have.
- Do not allow anyone to work in the garden while sick, or until 24 hours after symptoms, such as vomiting or diarrhea, have subsided.
- Ensure that all harvesters wash hands thoroughly in warm, soapy water for at least 10 to 15 seconds, and then rinse with potable water. Ensure that all open cuts or wounds on hands, arms, or legs are properly covered prior to participating in the harvest.
- Require harvesters to wear closed-toed shoes to prevent cuts, stings, or other injuries.
- Consider using single-use disposable gloves when harvesting, or handling, fresh produce as an extra precaution.
- Harvest the garden regularly and remove any rotten produce.



Food Safety Tips for School Gardens, continued

- Use cleaned and sanitized food grade containers, such as plastic bins or buckets, to hold harvested produce. Do not use garbage bags, garbage cans, and any container that originally held chemicals. These types of containers are made from materials that are not intended for food use.
- Clean harvesting tools, such as knives, scissors, etc., with soap and potable water immediately before and after each gardening session.

Using School Garden Produce in your School Meal Program

- Check with your local health department to ensure that local regulations permit food from gardens to be served as part of school meals.
- If the harvest from the school garden will be used in the school meals program, the school garden coordinator should work cooperatively with the school nutrition director to plan and implement the garden.
- Discuss food safety practices in the garden with school garden coordinators. Consider asking gardeners to document their practices. Use the information in this document as a guide to identify appropriate practices.
- Accept produce harvested from school gardens only when school nutrition staff is present to receive it. All produce dropped off or left when staff is not present should not be used in the school meal programs.
- See *Best Practices: Handling Fresh Produce in Schools* for guidelines on receiving, storage, preparation, and service of fresh produce in schools.
- Reject produce that does not meet school nutrition program standards.
- Receive and inspect produce harvested from school gardens according to the same procedures used to inspect produce from the district's distributors.
- Do not use any produce that has been noticeably contaminated by animals or insects.
- Refrigerate garden produce immediately, unless the particular item is normally held at room temperature.
- Store, prepare, and serve school garden produce separately from other sources of produce to maintain traceability.
- Document service of school garden produce on the menu management/ food production record. See *Ensuring Traceability of Fresh Produce* for more information.
- Ensure that liability for a potential foodborne illness caused by produce grown in school gardens is covered by your school district.



Food Safety Tips for School Gardens, continued



Addressing Community Donations

Members of your local community, or staff or faculty at your school(s) may want to donate produce grown in private or community gardens to your school meal programs or to your school(s). Although their intentions are good, these products must be safe and of acceptable quality to serve in your school meals program. Before accepting donations, ensure that donated produce food safety practices have been followed to grow, handle, and transport the produce.

- Check all local and state health regulations regarding receiving community donations before you accept these products.
- Provide information to community members about USDA policies and regulations for school meal programs and state and local health requirements that you must follow. Address questions in a positive manner.
- Determine whether your school district has liability insurance to cover any food safety issues that may result from produce received from private or community gardens. These entities typically do not carry product liability insurance for potential food safety risks.
- Develop guidelines and expectations for growing and handling practices for any fruits or vegetables used in your schools. Share this information with individuals or groups who are interested in donating produce to your schools.
- Visit any gardens that supply produce to your school foodservice program to evaluate food safety practices. Discuss the practices in this document with gardeners. (See *Verifying On-Farm Food Safety* for additional information)
- Only accept donations that are dropped off when a school nutrition staff member is present to receive them.
- Conduct a visual inspection of any vehicle used to transport produce to a school to assess whether it is clean. A vehicle should not be used to transport fresh produce if it is also used to transport live animals.
- Rotten or damaged produce should not be accepted.





Food Safety Tips for School Gardens, continued

Resources

Verifying On-Farm Food Safety

Ensuring Traceability of Fresh Produce

Best Practices: Handling Fresh Produce in Schools

Handling Fresh Produce in Classrooms

Healthy School Meals Resource System School Gardens and Farm to School Resources:

http://healthymeals.nal.usda.gov/nal_display/index.php?info_center=14&tax_level=2&tax_subject=526&level3_id=0&level4_id=0&level5_id=0&topic_id=2314&placement_default=0

National Gardening Association, www.kidgardening.org

Garden to Table: Five steps to food safe fruit and vegetable home gardening. University of Rhode Island, Connecticut, Maine, New Hampshire and Vermont. <http://www.sde.ct.gov/sde/LIB/sde/pdf/DEPS/Nutrition/OPmemos/10/5stepsOM1010.pdf>

Grow It Healthy, University of Maryland Extension, www.growit.umd.edu

Safety in the garden, California, <http://www.cde.ca.gov/ls/nu/he/gardensafety.asp>

Bucklin-Sporer, A. & Pringle, R.K. (2010). *How to grow a school garden: A complete guide for parents and teachers*. Portland, OR: Timber Press, Inc.

McGrath, M. (2006). *Book of Compost*. New York: Sterling Publishing Company, Inc.

Note: USDA's Food and Nutrition Service has addressed questions regarding the operation of a school garden in Memo SP 32-2009, dated July 29, 2009:
http://www.fns.usda.gov/cnd/governance/Policy-Memos/2009/SP_32-2009_os.pdf.

While this policy memo outlines how school food authorities may operate or purchase foods from school gardens, school nutrition programs are not required to grow or use any produce from school gardens.