

# Cooking with Youth in School Gardens

**At A Glance:** School gardens offer an opportunity to engage students with nutrition and culinary lessons that teach life skills and promote healthy food choices. When cooking in school gardens, educators face challenges with outdoor food preparation, youth and group supervision, and health and safety. This fact sheet reviews important considerations and tips for cooking with youth in school gardens.

## Authorization and Liability

Before getting started, educators must ensure that any necessary paperwork and precautions are in place to protect the students and institutions involved. Check with the local health department and school administration to verify if cooking and serving food in the garden is allowable. Some schools may not allow knives on site. It is also advisable to require parents or guardians to sign liability waivers that disclose any food sensitivities or allergies. In general, expect to adapt recipes to use seeds and seed butters instead of nuts to avoid nut allergy issues.

## Planning

Cooking in school gardens requires thorough planning to ensure a successful experience for teachers and students, especially if the garden is new to hosting cooking lessons. First, consider the facilities available at the garden. Is there access to potable water and electricity? Are there sturdy tables, shade, and cooking and cleaning equipment? These questions will guide the recipe selection and format. Will the recipe require preparation of any ingredients beforehand? Depending on the age of the students and length of the class, ingredients can be chopped or cooked just before class to simplify the process or avoid contamination from raw foods like meat or eggs. The format of the class will also inform the need for supplies and ingredients. Determine the amount and type of equipment and supplies needed for the class, including any additional sets if multiple groups will be preparing recipes at the same time. It's best to try a recipe exactly as it will be prepared in class at least once before teaching the lesson to check for quality and quantity. Finally, volunteers or additional adults are often necessary to help supervise cooking lessons, especially when sharp or hot tools are used.



## Classroom Management

Outdoor classroom management presents unique difficulties, especially during cooking activities. There should be a minimum of one adult for every eight students, with more adults when knives and stoves are involved or when students are younger. Educators can deliver instructions and demonstrations to the class as a whole, but larger classes may benefit from breaking into smaller groups for food preparation. If classes are too large or short for individual involvement, the teacher can prepare

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the recipe at the front of the class and call on student volunteers to assist with tasks like measuring or mixing. Hands-on lessons are best whenever possible, as they will be the most impactful for students, however brief or simple.

With small groups, each group can make their own version of a dish, or groups can rotate through stations to make multiple recipes or different steps of a single recipe. Ideally, each group will have one adult, who stays with a single group or oversees a specific station as groups rotate. Regardless of the format, have at least one additional adult to help manage class dynamics so the educator can focus on instruction.

Before every cooking class, review safety and kitchen rules. For older students, it can be valuable to have a clear overview of the steps, but reviewing the whole recipe at once can overload younger students with information. Time management is critical for food preparation at any level, and older students should begin to incorporate this skill into their process. Briefly describe the dish, showing a sample of the finished dish if available, and provide an overview of the recipe steps if appropriate. It's also helpful to share the nutritional value of the dish and connect it to healthy eating. High school students can help research and present this information as an additional lesson.

To begin the cooking process, explain only the first step. Complete one step at a time and make sure the students are quiet and focused before providing instructions. It can be helpful to use a "callback" to ensure you have the class's attention before explaining a task or rule. For younger students, avoid too much focus on reading the recipe or measuring unless it is a primary lesson objective (but remember that students often confuse teaspoon and tablespoon).

An essential tool for outdoor lessons is a list of "back pocket" activities to keep students busy as meals cook, after the lesson, or during other idle times. As long as hands are washed thoroughly before any eating or cooking, children can do garden-maintenance tasks like weeding, planting, watering, picking up trash, and digging. For gardens with flowers, students can pick bouquets to decorate the table or as gifts for parents or teachers using plastic bottles or jars as vases. Students can practice making or recording garden observations about habitats, pollinators, or insects. Coloring sheets and scavenger hunts are another fun activity that require printed worksheets, but simple art prompts like "draw your dream garden" can just use blank paper, clipboards, and markers or crayons. Journaling, writing prompts, or mapping the garden can challenge more advanced students.

## Set Up

All surfaces should be cleared of books, papers, or other items and sanitized prior to cooking. Tables for food preparation should be at an appropriate height for student age, especially if knives will be used. Have a bowl or tray for scraps for the compost, and a trash can nearby for any garbage. Any sharp or hot cooking equipment should be in a designated area away from the food preparation space.

Each group or person that will use cutting implements should have their own cutting board that is cleared and/or cleaned between uses. Review and encourage the concept of mise-en-place, where students measure out and prepare all ingredients for the recipe before any cooking takes place. Make sure that the food preparation space is at an appropriate height for the students, allowing them adequate leverage for cutting and other tasks. Adjustable height folding tables can work if available tables or counters are too tall. Keep a basic first aid kit on hand in case of emergencies and determine the correct procedures if there are any accidents.



If there is extra time during or after a cooking lesson, youth can harvest flowers for making bouquets or as table decorations.



## Cleaning

A clear and organized cleaning protocol is critical. Cleaning stations and a container for dirty sharp tools should be set up before the lesson and pointed out during instructions so students can use it as needed. Plan for spills by stationing paper towels throughout the space, and ensure any accidents are cleaned up promptly. For messy tasks like cleaning out pumpkins or grating beets, tables may be covered with plastic tablecloths or butcher paper. Teaching students to clean properly (e.g. handling sharp tools, keeping the space clear, washing dishes from cleanest to dirtiest) is an important part of the cooking process, for reasons of safety and practicality. Demonstrate and remind students to “keep a clean station” with no clutter.

Potable water is essential for any cooking lesson. Students should wash hands before any cooking or eating, either inside the school or at an appropriate handwashing station. Washing produce and dishes also requires potable water and a separate station from the handwashing sink. If the garden does not have a safe water source, a water cooler may be an option. Some water coolers are designed for handwashing, or a mobile handwashing station could be purchased or rented. Cleaning dishes in the garden or school requires dish soap, sponges, and a drying rack. Gardens may use dishwashing bins to streamline the cleaning process (e.g., prefilled bins to wash, rinse, and sanitize – this is the easiest and most efficient) or a utility sink and hose connected to the school water supply. Hot water should be used for dishwashing. Some gardens may use clean dish towels and drying mats, but air drying is the safest method (Hawaii Department of Health protocol requires food vendors to air dry dishes). For sinks, use a sink strainer to keep food from clogging the drain.

## Food Safety

Cooking requires precautions to ensure food safety, as well as the physical safety of participants. [Food handler certification](#) training will provide educators with a solid foundation in food safety when preparing food for groups. Teaching and enforcing hand washing protocol is an essential first step. Before any cooking or eating activity, students should wash their hands with soap and potable water for at least 20 seconds, then rinse and dry their hands with a clean paper towel. They must wash again if their hands come in contact with anything that could have germs, such as their own bodies (e.g. wipe their noses), dirt or garden tools, or raw high-risk foods like eggs. Re-

mind students to cover coughs and sneezes with an arm or elbow and wash hands afterward. A popular lesson on handwashing uses liquid “simulated germs” (one brand is [Glo Germ™](#)) and a UV light to demonstrate how contamination can spread and the importance of thorough handwashing.

Disposable nitrile gloves (non-latex) for food preparation are a useful option for touching irritating ingredients like kalo leaves or pumpkin, or for messy tasks like peeling cooked sweet potatoes or making patties. Glove use must be supervised with diligence to avoid cross-contamination. Even with clean hands, students should not use their fingers to touch or taste ready-to-eat communal food. The teacher should always model the [2-spoon tasting method](#) and underscore “no double dipping.” To avoid sharing or reusing utensils used for tasting, immediately place them in the sink or wash bin.

For recipes requiring perishable ingredients like dairy or eggs, keep foods at safe temperatures with refrigeration or coolers and ice. Avoid high-risk ingredients like meat or seafood, and if they are necessary, cook them to safe temperatures and ensure they will not cross-contaminate surfaces, equipment, or other ingredients. When using these items, remind students to keep raw and ready-to-eat foods separate. Depending on health rules, consider pre-cooking these ingredients to minimize the risk of students coming in contact with pathogens and contracting foodborne illness. Experienced garden educators advise keeping raw meats or fish out of the mix. As these are garden venues, emphasizing plant cookery makes perfect sense.

Educators should review and follow best practices for safety in school gardens, such as those found in the CTAHR publication [Student and Food Safety: Best Practices for Hawaii School Gardens](#). All harvested produce should be washed thoroughly with potable water and examined carefully for slugs or snails, which can transmit rat lungworm disease. Educators should closely supervise and double-check the washing process or have an adult manage this task. For shorter classes or younger students, produce can be washed before class begins. Due to the risk of rat lungworm disease, take extra precautions when serving or consuming raw leafy greens with students. High-risk populations for food safety include children under age 5, adults aged 65 and above, and immunocompromised individuals.

## Knife, Tool, and Equipment Safety

Teaching safety rules for knives, tools, and equipment is essential before starting class activities, and should be repeated and enforced at each lesson. Careful preparation and management of any hazardous items during the class will also mitigate problems. When reviewing kitchen rules, explain the consequences for misuse (losing access to the item, removal from the lesson if necessary) and always ask students for verbal confirmation that they understand and will follow the instructions.

Participants must roll up long sleeves and tie back any long hair before food preparation begins. Closed-toed shoes are essential to protect feet from sharp or heavy tools and burns (no slippers). While it is important to teach the proper method for carrying and passing knives, adults should be responsible for all transportation of sharp tools. Sharp items should be distributed after the safety rules are reviewed, and only when it is time to use them, then collected again afterward. A steel hotel pan can be used to hold knives during collection and distribution.

Always use a cutting board, and never cut things in a hand or in the air. For recipes using sharp tools, provide one cutting board for each student cutting. To prevent cutting boards from sliding, anchor them with a wet paper towel underneath. Students must understand where their knife should stay when idle. The cutting board should be the “home base” for the tools, so they do not leave the board unless they are ready to be washed or stored. Knives should only be held when in use: pick it up when it’s time to cut and place it back down on the cutting board after cutting is complete. If the user is in conversation or looking elsewhere, the knife should be on the board. Keep the knife at the back of the cutting board when idle, making sure the handle isn’t sticking out where someone could knock it off the table. Never try to catch a falling knife – just step out of the way. Chefs sometimes say “a falling knife has no handle.” When carrying a knife, it should be held by the handle down at the person’s side, with the tip down and blade facing backward.

The most important knife skill is the “claw” technique: one hand firmly grips the knife handle and the other hand holds the food with the fingers tucked under to form a “claw” hand shape. Go slow, watch your work, and keep the knife tip pointed down, with fingers far from the blade. The tip should rarely leave the cutting board surface when cutting smaller items; instead, “rock” the handle up and down with the tip as a fulcrum. Several useful techniques to teach students include creating a flat side on produce and then placing it flat side down on the cutting board for stability. The “bridge” cut is useful for cutting small items in half, where the item is held in place between the fingers and thumb, and the knife cuts under the “bridge” of the hand. A “cross-cut” involves turning an item sideways to cut into smaller pieces after the initial cuts. A correct,



For older students, adults may demonstrate and supervise potentially dangerous steps of a recipe, such as pan-frying with hot oil.

stable grip is also very important. A grip that includes the knife bolster (the point between the blade and handle) between the thumb and index finger offers more control than other grips.

For cutting ingredients with students, select the type of knife or sharp tool based on the age or skill level of students and ratio of adults to youth. Young children can use nylon knives or plastic disposable dinner knives, depending on the food, as well as non-sharp tools like spoons or melon ballers. Stainless-steel serrated dinner knives are another option. Students can use scissors of the appropriate size and sharpness to cut herbs and green onions into small pieces, and wavy cutters to slice firm vegetables like cucumbers or carrots. With the appropriate education and supervision, older students can use regular chef knives and paring knives. Select the appropriate knife size for the task.

Compared to a box grater, using a hand-crank cheese grater can minimize the risk of injury when grating cheese for pesto or other dishes. If box graters are used, emphasize that each hole is a tiny knife. The bottom of the grater should be stabilized on the cutting board, with fingers as far away from the grater as possible. Never grate the entire item of food – always stop with at least an inch left and eat or discard the leftover piece. Peelers can also be



dangerous, so carefully demonstrate and supervise their use with qualified youth: peel away from the body with the base of the food stabilized on the cutting board, keep fingers far from the peeler, and peel the lower half of the food before flipping it to peel the other half (don't try to peel the entire length at once).

Remind students that pots and stoves can be hot, and never leave stoves unattended. Heat-resistant gloves may be preferable to oven mitts for protecting older students' hands when they work with hot tools. Only use dry pot-holders or mitts to touch hot containers, as wet fabric conducts heat and can lead to burns. For pots and pans on the stove, always turn handles inward so they aren't knocked over or jostled by people walking past. Treat all pots and pans as if they are hot. With hot, lidded pots, open the far side of the lid first to release the steam away from the face and avoid burning. Teach students to warn others when they move hot, heavy, or sharp items in the kitchen by using phrases like "behind you" or "hot pan." Running in the kitchen is never allowed.

### Garden Cooking Tools, Equipment, and Supplies

Garden amenities like storage and power will determine the supplies needed for a successful and safe cooking experience. If the lesson will be taught by a guest educator, check which supplies or tools are already available at the garden before bringing in additional items.

To protect non-perishable ingredients and tools or equipment from pests and the elements, store items in weather-proof bins in a secure shed or classroom. Fold-up carts or wagons can transport supplies between locations. Given that most gardens lack refrigeration, plan to use either school refrigerators (if allowed) and/or coolers and ice for perishable food storage. Use clipboards and sheet protectors for printed recipes at each station or group, and/or write out the recipe on a large whiteboard or chalkboard. Compost buckets with lids can store scraps from food preparation. For kitchen tools, choose stainless steel or plastic to avoid broken glass or ceramic. The Edible Schoolyard Project offers a [basic checklist of tools](#) for getting started with cooking in the garden.

While most gardens do not have their own power source, it may be possible to run an extension cord to an outlet at the school (check with school administration and facilities first). Keep in mind that the capacity of the circuit is limited and many electrical appliances draw significant power. Use a surge protector and always do a trial run to check if the outlet can handle the number of appliances being



Bean dip with garden herbs is an easy recipe that requires no electricity or fancy equipment. Kids can take turns smashing the beans.

used simultaneously. Electrical cords are a tripping hazard, so consider using a brightly colored drop-over cord protector to prevent accidents. Painter's tape can hold cords in place on tables or counters to keep them out of the way.

Popular kitchen appliances for cooking in the garden include blenders, induction burners, and electric kettles. Electric pressure cookers can be used as a standalone appliance for basic stovetop cooking (no additional pot needed), as well as pressure cooking. This can be ideal for cooking with younger students since its enclosed structure reduces the risk of burns from touching the sides of a hot pot.

For gardens without access to power, consider a propane stove for recipes that use stovetop heat. Mortars and pestles are a great tool but require instruction and supervision to avoid breakage. Manual tools for chopping or

blending include rotary or manual food processors, rotary food mills, bike-powered blenders or grain mills, and hand cranked blenders. These can be used for smoothies, salsas, dips, and pesto without any electricity, with the bonus of improved safety and additional physical effort for students. Some gardens build or purchase solar ovens or dehydrators. Another option is cordless rechargeable appliances like immersion or portable blenders, hand mixers, food choppers, or electric kettles.

## Recipe Selection

Recipe selection should focus on using produce from the garden with minimal ingredients, tools, and equipment, as well as simple, safe techniques (e.g., avoid deep frying or candying). Healthy foods should be the priority but learning to make treats or snacks from scratch is also worthwhile, as home-cooked alternatives can be more nutritious than takeout or packaged foods. The recipe should be easy to follow and may use pictures for younger learners. It's always good to send students home with a copy of the recipe so they can replicate it with their family.

Recipes that work without electricity include salad dressing and salads (pasta, bean, potato, canned fish, panzanella), quick pickles (radishes, green beans, carrots), dips (hummus, bean, yogurt, herb, bruschetta), salsa, herb sauces (pesto, chimichurri), and summer rolls. Certain recipes may require cooking ingredients in advance, such as pasta or potatoes. If the garden lacks electricity but educators have access to a fridge or freezer at the school, cold, sweet treats are a good option: chia pudding, oat bites or no-bake granola bars, popsicles, and no-cook freezer jam. For those with just an electric kettle, students can make tea on rainy or chilly days or iced tea for hot days. They can also use their garden harvest as toppings for dishes that can be cooked with only boiling water, such as rice noodles or ramen, couscous, instant mashed potatoes, or small thin pasta like alphabets or stellina. With a stove, options are much more diverse: pasta, chili, curry, soups, stews, and sauteed vegetables, among others. For large groups, simple equipment-free recipes include hand-pounded bean dip, sunflower seed pesto, and herb butter, which can be served with vegetables or crackers.

Regardless of the recipe, offer opportunities for students to make choices about the ingredients (e.g., which spices or herbs to add) and encourage using their senses throughout the process. When the food is ready for eating, it can be fun to allow students to "plate" the dish and make it look visually appealing. For picky eaters, suggest "tasting" or "exploring" the dish rather than "eating." Some educators may suggest that students "must taste once." Even a lick is better than nothing, and continued exposure will improve their acceptance of new dishes. Remind them not to "yuck someone else's yum" by using

negative language about food. Encourage students to explain why they do or do not like the dish (texture, spices, flavors), rather than just passing judgment. It's important to emphasize that students themselves grew and prepared the food, and provide cultural context whenever possible. While cooking in the garden teaches important life skills, it can also expand children's perspectives on food, nutrition, and culture.

Cooking in the school garden is one of the most useful and enjoyable activities that the garden environment can offer students. Exploring food with youth in an outdoor setting is a challenge, but it's a natural extension of the garden's educational opportunities in health, food systems, and science. With the right tools, preparation, and precautions, youth can build their skills and improve their eating habits with far-reaching benefits for their families and communities.

## References

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## Tasks by Age

Supervision is required for all cooking lessons. Individual attention may be needed for students that struggle with instructions or behavior. If students repeatedly misuse tools, reassign them to other tasks.

2-4	5-7	8-11	12+
Pour ingredients	Mix batter	Learn knife skills	Learn to use kitchen equipment
Wash produce	Mash soft foods	Pour batter onto a griddle	Understand science of cooking
Stir ingredients	Crack eggs or form meatballs (then wash hands)	Read and follow recipes	Wash dishes
Break or tear foods like lettuce and green beans	Measure ingredients	Use a whisk	Pan fry or sauté
Move small ingredients between containers	Juice fruits	Plan a meal	Practice timing and technique for more complicated meals or dishes
Apply spreads	Clean tables	Flip pancakes	
Use manual food choppers	Peel hard-boiled eggs and fruit	Clean utensils	
Shell peas or beans	Use plastic or butter knives and wavy cutters with soft foods	Peel and grate ingredients	
Dip foods	Thread items onto blunted skewers	Open cans	
Carry unbreakable items	Rinse beans		
Roll, shape, and cut dough	Assemble foods		
Shake liquids in a closed container	Cut herbs and green onions with kid safe scissors		
Throw things in the trash	Gather ingredients		
Set the table			