USDA FNS People’s Garden School Garden Pilot Project:
Healthy Gardens, Healthy Youth

Gardening Tips for Working with Kids

The following tips are from HGHY Master Gardeners and site leaders and are based on their experiences gardening with kids. These are tips for both school and the summer programs.

Be Prepared
1. Send home information about the garden program including the details about who is leading the program, what the kids will be doing, where the gardens are located, when the kids will be gardening, what is happening with the garden produce, and expectations of the young gardeners. All gardeners should be wearing close-toed shoes and have sun protection. They will not be allowed to work in the garden or with food if they are sick or have been sick within the last 24 hours.

2. Every time you go to the garden, take supplies such as a first aid kit, wet wipes, water jug with cups (or have kids bring their own water) and water for washing the produce.

3. Use lesson plans and educational resources to prepare for each session. Play a game, sing a song, act out a play, read a book, or make a garden-based craft each session. Remember to have fun! See the Sample Garden Session outline at the end of these tips.

Working With the Kids
4. Make sure the young gardeners know the 3 R’s garden rules: Respect, Responsibility, Readiness.

5. Be fully prepared before heading to the garden so there will be little down time for the kids. The tools and any supplies should be easy to access and ready to go. Break large groups into manageable sizes. Have more than one activity and rotate them. Keep every child busy and on task or their attention will shift and they will drift. Have enough adult supervision to make this happen.

6. Always demonstrate before letting the kids work on their own. The more adult helpers you have to float around and guide the kids, the better. Do not do things for the kids, show them how and have them show you how back.

7. Check their work. Don’t take their word for it when they say they have completed a task. You might find that things were missed.

8. Take frequent shade and water breaks. Break times are good times to introduce healthy snacks, books, garden journals, or other hands-on activities.

9. Every child will appreciate some one-on-one time with instructors while working in the garden. Let them tell their stories and show you the weeds they found and pulled, etc.

Planning the Garden
10. Use the hands-on, deeply aligned classroom lessons to help the students plan their gardens. The kids will have fun learning and taking ownership of the garden. They will get excited about choosing what to plant and how much they need to plant by doing these lessons. A Master Gardener or an experienced gardener is a valuable resource to help kids discover what crops can be grown in the climate and in the amount of space they will have to garden. Start a Garden Journal or Garden Records right away.

11. Young students are not able to prepare the site for gardening. Master Gardeners and others can provide leadership for that. FFA students, parents, Ameri-Corps, Food Corps, garden clubs, retired teachers, neighbors and others have been instrumental in preparing the gardens and helping the youth in the planning stages.

12. For the young children, have the sections of the garden already measured out and marked according to the garden plan. For the older youth, help them measure and mark the garden sections.

13. Kids like to use garden tools, but they LOVE to use child-sized tools such as kid-sized rakes, hoes, shovels, watering cans, and gloves. The type of garden tools they need depend on the type of garden they will be working with and how it is planted – square foot vs. rows. They can share tools. Older students have been using adult-sized tools and even tools that have been loaned by Master Gardener groups.

14. Master Gardeners and FFA members are using their green houses to start seeds and grow transplants for the school gardens.

15. Help the students start a compost bin and get the whole school involved.

**Planting**

16. Go over tool safety rules for hoes, trowels, and rakes. A tool safety game is part of the gardening curriculum.

17. Go over ways the plants in your garden are going to be planted: seeds, sets, transplants, seed pieces.

18. Plant fast growing (cool season) crops like radishes and spinach for early satisfaction. Try to stagger your crops for constant harvest opportunities. Make sure the students will have something to harvest when they return to school in the fall.

**Maintaining**

**Watering**

19. Watering is extremely important, especially in raised bed gardens. If you are meeting just once a week, you may have to make plans for additional watering. Families, youth groups, organizations, neighbors can sign up for times. Someone will need to be responsible to make sure the watering plans are carried out.

20. Using a watering wand is a good way to water the garden. Show how to water at the base of the plant. Teach the kids to count how long it takes to water a plant.
Weeding
21. Help the kids distinguish the difference between weeds and garden plants. Show them how to pull weeds so that the garden plants are not disturbed. Tell them where you want them to put the weeds. Have challenges such as finding the biggest weed, most unusual weed, most weeds, etc. Talk about why some parts of the gardens have more weeds than other parts, etc.

Insects and pests
22. Insects intrigue and scare children. They enjoy doing the lessons about pests and going on hunting missions to find and eradicate them. Getting to show everyone the squash bug they found – and sometimes their eggs – is a joy in and of itself!

23. Use the lessons to identify “good guys” and “bad guys” in the garden and to figure out what to do about them. Then help the kids take the next steps to protect their garden from unwanted pests.

Harvesting, Preparing and Eating the Produce!
24. Kids get excited when they see fruits/vegetables growing on the plants. Make sure that they show everyone by pointing and not picking! Describe what to look for to determine when the fruits/vegetables are ready to harvest.

25. Show kids HOW to harvest produce gently. For example, gently hold a bean plant before pulling off the bean, cut the lettuce with scissors, etc.

26. Kids love to harvest and taste the bounty. Try to include this in every lesson.

27. Include in the lesson, ideas for how the food can be eaten. Simple recipes such as cucumber-flavored water, radish or veggie sandwiches, veggies with dip, cucumbers and onions in vinegar, etc. are the best. Get a large bottle of Ranch dressing because the kids will try anything they can dip! There are several ideas in the lessons.

28. Show the whole vegetable before cutting it open. Have them find the seeds.

29. Plastic plates and knives can be used for cutting and preparing produce.

30. Help the kids put their gardens to bed.
Sample Gardening Session

1. Meet in gathering area
   a. Remind everyone about behavior expectations.
   b. Chat a bit – What’s up?
   c. Give garden plan for the day
   d. Split into smaller groups if necessary
   e. Have a planned garden activity for each group with an adult supervisor

2. Garden projects
   a. Planting
   b. Weeding
   c. Pest patrol
   d. Watering
   e. Harvesting
   f. Washing
   g. Cutting (if necessary)

3. Snack time
   a. Make their own snacks
   b. If there is nothing to harvest, consider produce from farmer’s markets
   c. Focus on fruits and vegetables
   d. Send ideas home to the families

4. Activity session – see lessons for ideas for games, songs, stories, plays, crafts

5. Go home!
COMPOSTING IN SCHOOLS
Adapted from the USDA People’s Garden Implementation and Beyond guide. Please be sure to refer to pages 28 and 35 for more detailed information on composting.

COMPOST is a dark, crumbly, and earthy smelling form of decomposing organic matter. It is the magical secret ingredient that makes all garden soil hum with life and vigor and is critical to a garden’s health and productivity. Compost also improves soil structure and tilth, making it a more hospitable and even nurturing place for plants and organisms to live.

EVERY SCHOOL GARDEN SHOULD HAVE SEVERAL COMPOST OPTIONS: a worm composting bin is generally kept inside, it can take small amounts of food scraps, produce a great soil amendment and kids can explore what lives in the bin all year round. A 3-bin outdoor composting system is very appropriate for a good-sized school garden. This system can take care of larger amounts of fruit and veggie scraps and also garden and yard trimmings. Note: methods for composting in a worm bin versus an outdoor bin do vary. Please do not follow the following directions for a worm bin.

THINGS to KNOW BEFORE YOU START: Composting is easy, cheap and good for the environment and fun to do, but there are some key tips to follow so your bin doesn’t get smelly or attract pests. While a small composting system helps provide great usable compost but almost never produces as much as the garden will need.

Composting is similar to cooking – start with a pot, add the right mixture of ingredients, let it heat up, and out comes nutritious compost! But, without the right ingredients, things can go very wrong!

*For tips on how to build various bins visit the Cornell Waste Management Institute. For detailed resources, ideas for student activities, and much more, please visit Cornell Composting in Schools online.*
THE RECIPE:

Step 1. CHOOSE A BIN for your school garden compost. A simple welded wire bin is <$15, very easy to set-up, to use and to harvest finished compost. If the bin is really used, you may eventually need two or three of these bins. Another popular set-up in school gardens is a 3-bin pallet system. For more specific info on these and other bin options, please visit ccetompkins.org/compost.

Step 2. GATHER INGREDIENTS. Think of compost ingredients falling into two categories: “GREENS”, which are made mostly of nitrogen and are (with a few exceptions) the color green or another color and “BROWNS” which are mainly made of carbon and generally brown in color. A compost bin should always have three times as many browns as greens (by volume). Too many greens in relation to the amount of browns is the #1 cause of compost troubles including lack of decomposition, flies, smells, excessive moisture or rodents. Here are ingredients that fall into the green and brown categories. You do not have to add each ingredient to your bin.

**GREENS**

**Food scraps** — any mixture of some or all of the following ingredients:
- Vegetable peels and seeds
- Egg shells (crumbled ideally)
- Any vegetable or fruit scraps*
- Coffee grounds and filters, tea bags
- Breads and grains
- Some manure from poultry, cows, horses or rabbits**

**Garden debris** — any mixture of some or all of the following ingredients:
- Stems, leaves, fruits you’re not going to eat, etc.*
- Grass clippings, green

**BROWNS**

**Yard or Garden debris** – add a mixture of some or all of the following ingredients:
- Hay or straw
- Wood chips
- Grass clippings, brown
- Weeds and other garden waste
- Leaves, dry and brown
- Ashes, cooled and grey
- **Shredded** newspaper
- Sawdust

*The smaller the size/pieces, the better and faster it will compost.

**It is suggested to avoid using manure in a school compost bin unless it is a commercially produced fertilizer product.
DO NOT put in the compost bin:
- Meat, bones, dairy products, oils, and fats. While these are compostable, they require a higher temperature to decompose. That temperature can be difficult to obtain, and those produces will attract animals if not done correctly.
- Glossy paper, plastics of any kind, chemicals, tomatoes or plants with blight or other diseases.
- Any parts of plants if they have disease or fungus.

Step 3. Now that you have a bin and you know what you can and cannot put in it; you are ready to ADD INGREDIENTS to the bin.

- Pile course woody sticks inside the base of your bin to create a nest 1-2 feet high. This nest will allow air to easily circulate throughout the bin.
- Layer a generous amount of browns on top of the sticks being sure you make a bowl shape and not a volcano shape with the browns.
- Add greens to the center of the bin. If adding a lot of greens, spread with a shovel or pitchfork to make a thin layer being VERY CAUTIOUS to keep greens from getting close to the edge of the bin.
- Add a thick layer of browns to cover the greens, ensuring again that you’ve made a bowl shape and not a volcano. Be sure the browns cover the greens completely and go right to the edges of the bin.
- Continue this layering method of adding greens and browns until your bin is full.

Step 4. LET THE PILE COOK
By layering greens and browns and ensuring airflow in this mixture, you have created the perfect habitat for micro and macro organisms to do their work and help your compost pile to heat up – exactly what is needed for the ingredients to decompose and turn into that nutritious soil we long for.

Consider getting a Compost Thermometer so you and your students can observe and monitor the bins temperature. (For student research project ideas, visit the Cornell Composting web site). A healthy school garden compost bin will easily reach 90 degrees at its center, and can reach upwards of 140 degrees! Check the temperature
in the middle and at the edges of the bin. Is one area hotter? Is your bin hot on a very cold day? What about on a rainy day? Do certain types of browns affect the temperature of the bin?

The composting process will take 3-9 months. The length of time will vary depending on the time of year, the types of browns you’re using and how hot your bin gets. Once you fill the bin, you will notice the volume settle after a few days. You can continue to add browns and greens to the bin, repeatedly filling it up, or (and a preferred method), is to let your full bin sit for 3-9 months undisturbed other than monitoring the temperature if you choose, and start the layering process over in a second bin. Starting a second bin rather than continuously using the same bin will make it easier to harvest the nutritious soil amendment you and your students created.

**Step 5. HARVESTING**

Before you harvest, assess if your compost is ready to use in the garden. Some good clues that decomposition has basically stopped are if the temperature of the bin has leveled off for at least a week, you can no longer identify any original browns or greens (with the exception of woody sticks), and the compost should have a crumbly texture, dark color and smell earthy.

While you will be able to harvest some usable compost to add to your garden, a small compost bin will *not* produce all of the soil amendment your garden needs for the year. You should expect to harvest **40 times less** usable compost by volume as compared to the quantity of greens and browns put in the bin. That said, harvesting compost is rewarding, fun and is the best way to show students how “waste” from the garden can turn back into food for the plants.

To harvest, if you stopped adding new ingredients to the bin months ago, you can simply by shovel the compost out of the bin. The welded wire bins are easy to just lift up and off the pile so you have easy access. If you’ve continued adding new materials to the bin, the ingredients at the bottom might be ready to use while those in the middle and top need more time so you will need to separate unfinished compost from finished compost. A simple way with some bin styles including welded wire, one person can lift the wire a foot or two from the ground, while another shovels out finished compost from the bottom of the bin. If this is not possible, use a screen of 1/2-inch hardware cloth to sift the entire bin. The finished compost will fall through, while the pieces still breaking down will remain in the screen so you can return them to your compost pile for further decomposition.

**QUICK TIPS:**
- Keep a well-stocked supply of browns right next to the compost bin. You or a compost volunteer should be in charge of always ensuring browns are easily available.
- If multiple people are adding to the bin, offer a short training on how to add ingredients to it.
- Keep an eye on the bin as it fills. Ensure that only browns can be seen from the outside of the bin.
- NEVER just add greens without covering them thoroughly with browns. If you do not have a supply of browns on hand, you must wait until you do to compost your greens.
- NEVER pile greens or browns to make a volcano shape in the center of the bin. This will cause the bin ingredients to eventually roll down the volcano and spill onto the sides of the bin. Greens not covered by browns will smell and attract animals.

References and Credits:
Image credits from Cornell Composting, http://compost.css.cornell.edu/
Cornell Waste Management Institute, http://cwmi.css.cornell.edu/composting.htm
Garden Maintenance Checklist: After You Have Planted the Cool Season Crops

**WATERING**

*Why:* Plants use water for a number of important processes, including photosynthesis and transpiration. Water also aids in the absorption of some nutrients.

**How To:**
- Observe and interact with soil first to determine if water is needed.
- When watering, apply water to base of plant to avoid excessive moisture on leaves which can cause fungus.
- Water early or late in the day if possible.
- Apply water slowly to allow maximum absorption by plant roots.

**How Often:**
- During most of the growing season, plants need about 1 inch of water per week.
- **Check the soil** first to check if the plants need to be watered. Generally, if it doesn’t rain, water plants every other day as seedlings (small plants). Water every 2-3 days once plants mature.
- In hot, dry, and windy conditions, plants need more water. In cool and humid conditions, plants need less water.
- Less frequent watering that is longer in duration is best.

**MULCHING**

*Why:* Adding organic matter to soil helps increase its ability to hold water and keeps roots from drying out reduces weeds.

**How To:**
- Mulch is any covering on top of soil which prevents unwanted seeds from blowing onto the soil or sprouting from below, i.e. river rocks, wood chips, straw, or anything else that will make a barrier between the elements about and the soil below.
- Tree care companies are often happy to donate woodchips to a school garden
- The work of hauling and spreading mulch can be entirely carried out by students from as early as kindergarten.

**COMPOST**

*Why:* Compost contains important nutrients that plants need to grow, and it provides the soil with structure and tilth, making it a more hospitable and nurturing place for plants and organisms to live.

*Checking the Soil for Moisture*
- The soil should feel like a moist, wrung-out sponge.
- Touch the soil with bare fingers. Indent your finger into the soil an inch.

*Note:* Plants wilt when not enough water is getting to the leaves BUT they may also wilt with excessive water, so checking for moisture is important.

*Refer back to the February People’s Garden Lesson for more information regarding “How” and “Why to Mulch.”

Composting How to’s and Resources:

“Healthy Gardens, Healthy Youth”
PEOPLE’S GARDEN SCHOOL PILOT PROJECT

The Extension Partnership including:
Washington State University Extension
Cornell University Cooperative Extension
Iowa State University Extension and Outreach
University of Arkansas Extension
How To:

- Compost can be made in freestanding piles or contained in special bins as long as it receives proper water and air movement.
- Once materials are broken down, compost can be incorporated into the soil to increase the nutrient content and improve the structure.
- For every unit of green material (fresh scraps) THREE TIMES the amount of brown material (leaves, straw, sawdust, shredded newspaper) should be added.
- Compost anything biological, but it is not recommended to compost items such as meat, dairy, oils, or pet wastes in a small-scale system.

**WEEDING**

**Why:** Weeds should be removed because they will compete with your intended crops for space, light, and water.

**How To:**

- By hand is safest so you don’t pull the wrong plant.
- A garden hoe or weeding fork can help for deep roots.
- Mulching helps lessen weed growth.
- Make sure roots of weeds are completely removed.

**How Often:**

- Monitor garden continuously.
- Remove weeds when they are small.

**FEEDING YOUR SOIL**

**Why:** The garden depends on a foundation of good garden soil. Soil is healthy when it smells good, holds moisture, and when the plants you put in it are growing and producing healthy looking stems, leaves, flowers, and roots.

**How To:**

- Apply regular additions of high quality compost.
- Apply a covering of mulch to the top of the soil.
- Never dig the soil when it is wet.
- Do not let soil dry out, and try to prevent too much sun exposure (by using a layer of mulch).

**How Often:**

- Ongoing
- Add a good source of organic matter to the soil a couple of times a year
- Apply several applications of mulch on top of the soil each season.

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**A Note about Fertilizers:**

A variety of fertilizing strategies exist, and fish emulsion fertilizer is recommended. Fertilizers should be handled by adults, and apply only the needed amount. Constantly monitor nutrient levels and provide additional fertilizer when needed.

**Tip:** Learn how to identify the seedlings of your crops! After you know what to keep, you will know what to remove.
Harvesting is one of the nicest chores of the season. If you follow a few important, but easy tips, you will get the most of your crops. Some crops (e.g. carrots) only provide one harvest, while other crops (e.g. lettuce) can provide multiple harvests. If possible, harvest early in the morning, after the dew dries, but before the heat of the day.

**LEAFY GREENS – Lettuce & the Brassica Family (including Spinach, Kale, Chard, Collards, Asian Greens, Mustards)**

To harvest at peak flavor and freshness, harvest young greens when they are just a few inches long. At this stage all greens are tender and delicious eaten raw in a salad. These are called “baby greens”. Pick the largest, outside, leaves first while leaving the smaller and younger inside leaves for harvesting in a week or two. If possible, eat your greens the same day you pick them. Larger leaves, 6-12” long, are less tender and are best for cooking. Remember that greens cook down; plan about 6 cups of greens for 4 usual servings. Always wash garden greens carefully before eating or cooking to remove dirt and small insects.

**Tip:** Snip (with scissors or skilled fingers) the greens about ½-1” above the base of the plant to encourage new growth. Harvesting this way will allow you to get 3-5 cuttings of lettuce and spinach and even more from kale, chard and other hardier greens.

**Note on Lettuce:** If you planted head lettuce and prefer to harvest an entire head, wait until the entire lettuce plant is about softball - melon size and looks like the shape of head lettuce, as you know it. Don’t wait too long though - Growing head lettuce rather than harvesting baby greens often allows more time for pests and diseases to attack the crop.

**Simple Greens Recipe**

- Wash and dry greens and cut larger leaves into pieces about 3 inches long.
- Heat a bit of olive oil in pan with a clove of chopped garlic or a few tablespoons of chopped onion. Cook 2-3 minutes.
- Add greens and a dash of water. You may keep the greens plain or drizzle with a dash of soy sauce or balsamic vinegar. Cook 3-4 minutes until softened.
- Remove from heat, place into bowl. Sprinkle with slivered almonds, sunflowers seeds and dried cranberries, or chives chopped chives from your garden. Serve cold or warm.

**LEGUMES – Peas, Snow Peas, Beans**

Harvest peas with 2 hands, holding the vine with one hand while snipping the entire pod off the vine with your other hand. Harvest when fully mature, about 2” long for peas and 4” long for beans, depending on the variety planted. Harvesting encourages new growth, so be sure to pick off over-ripe pods you may have missed earlier on. Continue to harvest from the same vines as the legume ripens.
Peas and young beans can be eaten raw, added to salads, or lightly steamed or sautéed.

**Cucumbers & Squash (Cucurbit Family)**
Harvest cucumbers as they ripen to the desired size. For pickling, fruits should be 4 to 5 inches long, for eating fresh; most varieties grow to 7-8 inches long. Cucumbers will develop a bitter taste if they are allowed to over-ripen. (Note: Some varieties such as European or Dutch cucumbers can grow much longer. This is another reason why clear labeling of the plants in the ground is useful.)

To ensure cucumber vines continue to produce heavily all season long, it’s best to harvest daily to prevent them from becoming overgrown.

Even though huge zucchini squash are impressive, they will be more flavorful if they are picked when they are smaller.

**Tip:** Use a sharp knife or pair of scissors when harvesting, and leave a short length of stem on each fruit.

**Roots — Carrot, Beets, Radish, Potato**
It can be difficult to determine if root crops are full grown and ready to harvest because they grow underneath the soil. You may recall, most seed packets will tell you how many “Days to Harvest”. This is the number of days it takes from planting to harvesting. If you can keep track of when you planted the seeds (maybe you wrote it down in the garden journal or it’s listed on the label that next to the plant in the ground), you’ll know about when they are ready. That said visual clues are always helpful. Roots start to lift themselves up out of the ground a bit as they develop. You’ll see radishes, beets and carrots creep a bit (< 1/4 inch) above the soil giving you a clue about how wide they are getting.

**Tip:** Radishes and beets are easy to pull out of the ground whole. Carrots often break off, leaving half of that sweet orange snack for the worms. To harvest them whole, use a digging fork to loosen the soil around the root and pull it out at the base of the greens. For radishes and beets, grab the plant right at the base of the stem, loosen the root a bit by rocking it back and forth, and then pull. If the whole thing does not come up, gently use a digging fork as you would for carrots.

For potatoes, you can start gently digging for new potatoes once the plants start to bloom. Wash and cook new potatoes immediately, as they do not store well at all. If you are planning to harvest potatoes to store for a while, wait until the tops of the plants start to yellow and die back. Then gently dig around the perimeter of the plant and dig up the tubers. If you are
planning on storing them, don't wash them! Let them sit out in a cool place for a few days to cure, then gently rub off any dirt, and store in a cool, dark place.

**Fruits – Strawberries, Tomatoes, Peppers, Eggplant**
Similar to cucurbits, fruits like to be harvested when ripe and harvesting regularly encourages new production. Use a scissors or be very careful to snip eggplant and peppers from the stem without damaging the fruit. Leaving a small stem on the harvested fruit will help keep it ripe and ensure you don’t bruise it when harvested. Carefully pick tomatoes from the plant. For strawberries, grasp the stem just above the berry between the forefinger and the thumbnail and pull with a slight twisting motion. Carefully place the fruit into your containers.

**Herbs – Basil, parsley, mint, cilantro, oregano, rosemary, tarragon, sage, chives, lavender, thyme & more.**
Herbs are grown for their leaves, flower, roots or seed. Most commonly, culinary herbs are grown for their leaves and should be harvested before they flower. Flowering can cause the foliage to develop a bitter flavor. For example, while chives are quite attractive in bloom – and their flowers are edible and delicious – the stems tend to become tough and woody after bloom. Some general guidelines for harvesting herbs:
- Begin harvesting the herb when the plant has steadily been producing new growth. Harvesting generates the plant to continue to produce. Just be sure to leave enough leaves so the plant can continue to photosynthesize. Don’t be afraid to harvest. Up to 75% of the current season's growth can be harvested at one time!
- Harvest herbs before flowering, otherwise, leaf production declines because the plant will put its energy towards flowering and producing seed to reproduce. Tip: Pick off flowers buds as you notice them develop.
- ‘Annual’ herbs (basil, cilantro, chives) will have to be planted each year. They have soft stems and can be harvested until frost. Perennial herbs (rosemary, lavender) have somewhat woody stems and can be clipped until about one month before the frost date.
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The Extension Partnership including:
Washington State University Extension
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Iowa State University Extension and Outreach
University of Arkansas Extension

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