Edible Schoolyard Garden Jobs

Summary
In the garden program at the Edible Schoolyard, we emphasize four main skills as the foundation for maintaining a healthy garden and incorporate jobs into every garden class that appeal to the diverse interests and energy levels of our students.

In determining the garden jobs, we consider three main factors:

- Can many hands complete the task? We strive to offer jobs that an entire group of 6 to 10 students can be involved in for an entire working period.
- Is the task authentic to the needs of the garden? Similar to the pedagogy behind empowering students with real tools, we present real jobs that give students gardening skills they can work towards mastering over their three years as well as truly maintaining the space. Four of our most common and authentic jobs that students master and that we will participate in today are: harvesting, propagating, composting, and cultivating
- Do the tasks appeal to the diverse interests and energy levels of our students? In every garden class we present a variety of jobs that appeal to all students. For example students with incredibly high energy will thrive in more physical jobs or artistic students love a job in which they can spend the working period painting colorful signs for the garden beds.

In considering these factors, we are able to be intentional about presenting jobs that engage every student in our vastly diverse student body. As part of opening circle, garden teachers each give a brief description of the garden job he or she will be leading. This ritual encourages students to volunteer for the garden job that appeals most to him or her with open-mindedness and gives garden teachers an opportunity to co-teach.

Composting

- Gather at the compost pile for a check-in. Review the job (sifting, turning or building) and, with student input, describe the appropriate tools needed to complete the job.
- General teaching points about compost:
    - FBI (fungus, bacteria, invertebrates): What is their role and why do they need to be plentiful in your compost pile? (Answer: The FBI are decomposers and they need to be plentiful to decompose the compost quickly.)
    - What do FBI need to survive? (Answer: Food, air and water.)
    - Importance of heat as a measure of decomposition: What does heat signify? (Answer: Active, healthy bacteria populations.)
    - Rate of decomposition: What materials break down quickly and which take the longest? (Answer: Nitrogen-rich materials, like food scraps, decompose quickly, while woody, carbon-rich materials, like tree branches, take much

longer.)
- Gather necessary tools from tool shed and take back to compost row.

Build Pile
- Tools: pitchforks, rakes, shovels
- Prior to class, separate compost ingredients into piles of browns, greens, and food scraps.
- Have students hammer in stakes to mark the four corners of the pile, approx 3′ x 5′.
- Begin the compost pile by spreading out your coarsest material for the foundation layer. (It's important to provide as much air as possible at the bottom of the pile).
- Begin alternating layers of browns and the greens on the pile with the food scraps trickled in.
- Water each layer as it goes on.
- General teaching points for building a compost pile:
    - Review the necessary components to achieve a hot pile with happy decomposers (i.e. browns, greens, manure [optional], food scraps, water and air). Explain that bacteria are largely responsible for generating the heat of the compost pile through their body heat and digestion.
    - What elements do our browns, greens, and food scraps give us? (Answer: Browns give carbon and greens/food scraps give nitrogen.)
    - Can you identify the compost ingredients? (Answer: Different food scraps and weeds [greens], straw and leaves [browns].)
    - Students can also use the thermometers to compare the temperature of the different piles.

Turn Piles
- Tools: pitchforks
- Piles should be turned down Compost Row towards the back of the garden one by one beginning with the oldest.
- Have students hammer in stakes to mark the four corners of the pile, approx 3′ x 5′.
- Have students spread out around the pile and begin turning the pile over into the new staked-out area.
- While some students are turning over the compost, have others flatten out the pile as it's being made to build something that resembles a bread loaf and not a cone.
- Water the pile as it's being turned.
- General teaching points for turning a compost pile:
    - Review the purpose of turning a pile:
        - FBI need air and water to live.
        - Turning the pile reduces its smell by adding oxygen.
    - While turning, ask students to identify any visible FBI members.
    - Invite students to observe the different piles and stages of decomposition.
    - Have students use thermometers to compare the temperature of the different piles.

Sift Pile

- Tools: wheelbarrows, sifters, shovels
- Three students work together to sift compost over a wheelbarrow: two hold either end of the sifter and rock back and forth while the third loads the compost onto the sifter screen.
- Large clods and twigs that do not fall through the sifter should be put into a separate wheelbarrow and then carried back to the first compost pile in the row (to be folded back into a new pile).
- Finished, sifted compost should be stored in one of the soil bins.
- General teaching points for sifting finished compost:
    - Ask students to observe which materials take the longest to break down.
    - Review the role of finished compost in feeding our beds and soil mixes with nutrients and microorganisms.

Cultivating

- Gather at the to-be-cultivated garden bed for a check-in. Review the job and, with student input, describe the appropriate tools needed to complete the job.
- Gather necessary tools from tool shed (roughly half shovels, half forks, with one rake) and return to the garden bed to be cultivated.
- If applicable, move irrigation off to one side of the bed.
- Demonstrate the appropriate use of each tool in cultivating the bed.
    - Edging Shovel: The object is to cut the encroaching grass at the edge of the bed and turn soil in towards the middle of the bed. Edging should be done in a straight line along the edges, elongating the bed and avoiding making it wider.
    - Digging Fork: The object is to work the center of the bed by pushing the fork in with your foot and leaning back on the tool, heaving up, turning the soil, and breaking up the clods.
    - Rake: The object is to slowly comb out the weeds (crab grass) and put them in the wheelbarrow. When bed is in final stages, smooth out the soil and break up any remaining clods.
- Everyone should work together to pick out weeds from the soil and put them in the wheelbarrow.
- Demonstrate the "test" of cultivation: You know a bed is done when a digging fork can be held out at arm's length and dropped in the soil with the metal tines completely submerged in soil.
- Amend with compost by dusting a ¼" layer of compost on the surface of the bed and working it into the top two inches with a rake.
- Put irrigation back into bed.
- General teaching points for cultivating:
    - Why we cultivate: The addition of air is not only important in making the soil fluffy; it's also essential for the health of soil microorganisms. Cultivation also

prevents compaction and is beneficial for soil structure.
    - Amendments (especially compost): Compost is the #1 thing we feed this garden. We call it our "lifeblood." It is the source for organic matter, microorganisms and nutrients in a plant-available form.
    - Soil as a living precious resource: How do we take care of our soil? Why?

Harvesting

- Tools: harvest baskets, clippers (if necessary), trowels (if necessary)
- Gather students in front of the crop you are going to harvest for a check-in. Review the job and describe the appropriate tools needed to complete the job.
- Gather necessary tools from tool shed and return to the crop to be harvested.
- Demonstrate proper harvesting techniques for the crop you are harvesting.
    - If harvesting crops that continually produce, be sure to demonstrate harvesting no more than 20% of the plant, leaving sufficient leaves for new growth.
    - If harvesting alliums such as onions or shallots, be sure to demonstrate the use of a trowel.
    - If harvesting potatoes, be sure to demonstrate the use of a shovel.
- Begin harvesting with students. Be sure to describe what the harvest will be used for in the kitchen.
- When harvest is complete, take harvest to a cool area to clean and bunch or place in a labeled container for storage.
    - If harvesting leafy greens, fill three buckets of water and dunk greens in buckets successively to clean and keep crisp.
- General teaching points for **harvesting**:
    - Seasonality and ripeness: Prompt students to observe the traits of the plant you are harvesting. How do we know it is ripe? What season are we in?
    - Different stages of harvest: Harvesting of seeds versus fruits versus leaves
    - Role of pollination: How does this plant get pollinated?

Propagation

- Common propagation jobs: sowing seeds, upsizing, transplanting, divisions, cuttings and grafting
- Gather students in front of the greenhouse for a check-in. Review the job and describe the appropriate tools needed to complete the job.
- Demonstrate what will be sowed or what will be upsized.
    - If sowing, review seed packet.
    - Fill token amount of flat with soil and demonstrate how to sow/plant one or two seeds/seedlings.
    - Demonstrate how to label flat and water.
    - Write variety name and date on chalkboard for students to reference.
- Have the students observe the soil mix, pointing out the different components beneficial to root growth. What are the differences between sowing mixes and

upsizing mixes? (Answer: the addition of compost.)
- Have students break into teams of two and begin propagating.
- When a flat is complete, have students label flat with the variety name and date, move the flat to a nearby table or into the greenhouse, and water it.

Other Common Garden Jobs at the Edible Schoolyard

- Flower bouquets
  - Use harvest buckets and clippers to harvest flowers from the garden.
  - Have vases already filled with water ready for students to make bouquets after harvesting.
- Direct sowing in the garden
  - Once the bed is cultivated, sow seeds directly into the garden bed. This works well for cover crops and crops such as arugula, bok choi, turnips, radishes, and carrots.
  - Use watering cans from the toolshed to water the seeds after sowing.
- Chopping and turning cover crop
  - Use shovels to chop up cover crop, turn it, and fold it into garden beds.
  - If cover crop is fairly tall, cut by 50% first with clippers or grass saws and take to Compost Row.
- Transplanting in the garden
  - Use trowels from the toolshed to transplant starts from the greenhouse into garden beds.
  - Demonstrate how to transplant into the soil.
  - Use watering cans from the greenhouse to water the plants after transplanting the bed.
- Constructing and deconstructing trellises and fences in the garden
  - Building projects are a great way to engage students.
  - Use handsaws to cut bamboo or wood into workable sizes.
  - Use rebar ties to hold the trellises or fences together.
- Mulching
  - If mulching pathways, use shovels and rakes to fill up wheelbarrows and spread out wood chips.
  - If mulching garden beds, fill wheelbarrows with straw and spread out around plants in beds.
- Pulling out crops
  - Use wheelbarrows and shovels if necessary to pull out crops that have already been harvested and/or are dying.
  - Fill wheelbarrows with green material and take to Compost Row.
- Sign painting
  - Lay out painting materials and signs that need to be painted over or repair.
  - Walk the garden with students, taking note of crops that lack a sign, and generate a list.

    - Paint over old signs.
- Harvest worm castings
    - With students, shovel out small amounts of decomposed material into a wheelbarrow and pick out the worms, returning them to the worm bin.
    - An alternate method is to lay out a sheet on the ground and make mounds of the decomposed material from the worm bin, and wait for the worms to travel to the bottom of the mounds. Then, harvest the tops of the mounds and return the bottoms to the worm bin.
- Cooking in the garden
    - Before starting a recipe, consider the work that needs to be done and organize it into job groups or categories.
    - With students, review the recipe on hand. Describe the ingredients and jobs within the recipe and have students decide what part of the recipe they are going to be responsible for. (Look at take home **Choosing Jobs in the Kitchen Classroom**, for ideas on this).
    - Allow for students to have space between each other. Follow best practices for safety and emphasize keeping the area clean and organized, attention to detail, and reminders about helping each other and sharing jobs. On going hand washing too!
    - Give students the opportunity to harvest in the garden (Seed To Table) for side jobs and to help beautify serving platter. Edible flowers and large leaves are good for this.