Finger Lakes Eat Smart NY Community and School Garden Toolkit

Cornell Cooperative Extension

SNAP Supplemental Nutrition Assistance Program
Putting Healthy Food Within Reach

foodlink abundance shared

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Table of Contents

The Finger Lakes East Smart New York (FLESNY), a SNAP-Ed project funded by USDA, led a community and school garden initiative from 2015 to 2019. The goal of the Garden PSE (Policy, Systems, Environment) was to increase fresh fruit and vegetable consumption (FFV) among SNAP participants throughout the region. For this reason, FLESNY worked with gardens in communities in which there were high levels of poverty. Multi-level support was provided to over 40 garden sites, first in the form of site and capacity assessment followed by supplies, programing and logistical/planning guidance, training and capacity building. The strategy was to guide sites toward sustainability and self-sufficiency over a two to three-year period. By partnering with community and school sites and supplementing garden support with high quality FLESNY nutrition education, we were able to amplify our nutrition messaging and information and help move communities toward increased FFV consumption. We learned that gardens provide participants with valuable hands-on experiences both in the garden, the kitchen and the classroom and can help guide participants toward lifelong wellness. Gardens can also serve as the catalyst for community building and social networking.

This toolkit is a summary of lessons learned in how to guide gardens toward success and sustainability. Watching a child delight in tasting a fresh tomato for the first time or a garden volunteer take pride in picking and sharing harvested fresh vegetables has made for rewarding work.

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Introduction

School and community gardens have been a consistent feature of the American landscape for over a century and, with the current increased interest, many resources have been developed to support them. These types of gardens provide a source of fresh and affordable produce for schools and families who in many cases struggle with food insecurity and limited access to a healthy variety of fruits and vegetables. They provide green space in otherwise sterile school environments and in urban areas. Gardens are a venue for outdoor environmental education and a place for healthy recreational activity and they create a rallying point for groups who are looking to make improvements in their communities. Proper planning and management of these gardens is crucial to their success. This booklet will outline the best practices that have been used to ensure productive and successful garden spaces as well as a compendium of useful tools and resources.

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Establishing a New Garden

Setting Garden Goals

Establishing a shared understanding of garden goals among garden stakeholders is an important first step in planning a new garden or planning new life for an existing garden. Identifying all stakeholders is important in creating support for the garden project during the establishment phase. The purpose of the garden should be clear, and site planners should have an idea about what garden success looks like for their project. From there, planners can work backwards to set specific short-term and long-term goals for the site that will lead to that success. Review the FLESNY sustainability worksheet for sample indicators of success, such as number and diversity of participants or pounds of harvest yielded, as well as sample garden goals for the physical space, participants, or the community. Monitoring progress toward these goals and tracking indicators of success should be a regular activity, described in the Maintenance section below.

Garden designs can be very simple or complex and the design should support the **goals** of your site. Will the garden be primarily used for educational purposes, or will your goal be to maximize the amount of produce? How many members do you anticipate? Who else will be using the site?What types of crops would you like to grow and how much? Will the garden be managed communally or will it utilize a plot based system? Are there other uses for the site other than gardening such as outdoor classrooms or community gathering locations? Will people be cooking or eating at the site? What is the best layout to ensure good circulation around the site? How and where will the produce be used? There are many things to consider at this stage.

The bigger your end goal the more you will need to think about phasing. It is important that your garden is up and running within the confines of the growing season if you hope to get a yield during the first year, but remember that you don't have to build it all overnight. Garden beds can be constructed in the fall and filled with soil in the spring just in time to plant. Some projects are modest and can be accomplished with a few people and others will need to be phased over months or even years based on the scale of the project and within the confines of the funds and labor available. Slow organic growth of a project will also allow you to make adjustments based on lessons learned and new ideas and opportunities that arise.

Assessment Phase

The first step of garden establishment is a thorough assessment of the site, as well as the human capital associated with the project. FLESNY has developed and utilized a garden sustainability planning worksheet (which can be found in the appendix) to assist garden planners in assessing their sites and planning their gardens. By remembering the needs of plants and human users of gardens, we can provide a logical framework for success. Choosing a suitable location for the garden should be guided by the needs of the plants that will live there and the needs of the people who will use it. Many of the activities involved in choosing a site can make great educational experiences for children and adults, so try to include future garden users as much as is feasible. The site should have access to sunlight for most crops, an easily accessed water source, healthy soil, protection from animal pests, easy access for people of all abilities, a place to store tools securely, and enough space to grow the desired crops.

Cucumber vines at Newfield School Garden

Solar access is one of the first considerations when siting a garden. A fully shaded site will not be suitable for most vegetable crops, however, a site need not be full sun in order to grow food successfully. At least 8 hours of sun is required for healthy crops of most vegetables, but many greens can thrive with less, so don't be discouraged if your site is not in full sun. Mapping solar access throughout the day and across the growing season

can take some time for sites with shaded areas. There are a plethora of online articles, apps and downloadable tools that can help you map and understand your solar access.

he site should have easy access to **water** for irrigation. There are strategies that can be employed in the absence of water service, such as catching rainwater from adjacent rooftops or tool sheds. Installing new water taps can be prohibitively expensive, so it is highly important to have this in mind during site selection. A pre-existing water tap in close proximity greatly reduces future headaches.

School gardeners may have to be in communication with maintenance staff in order to access their water sources, but this is good practice for many other reasons as well. Maintenance staff can be our greatest allies so it's best to get them involved on the ground floor. Drip irrigation is an investment at the time of installation, but it can make the watering process less of a hassle in the long run. For community gardens, many municipalities have policies pertaining to growing on city-owned land that will make water access easier than putting in your own water line. Contact your school's facilities department or city's environmental, water or permitting department for more information.

Once the site has been selected it is important to ensure that the **soil** is healthy. Cornell University hosts a useful website: Healthy Soils, Healthy Communities. They provide a wealth of information about soil contamination, remediation and mitigation at http://blogs.cornell.edu/healthysoils/. Soil testing can be provided by a local Cooperative Extension office and will indicate if the soil has a proper balance of nutrients and is safe for gardening. Soil nutrients can be balanced by following the amendment recommendations provided in the soil test. Talk to your local agriculture or horticulture extension agent if you need help understanding your results. Depending on the results of your soil test, you may need to import compost or other soil amendments to boost fertility or adjust soil pH. A neutral pH is best for vegetable gardens but some species of woody fruits such as blueberries require acidic soil. Make sure you know what you will be planting before you make decisions about soil amendment.

Lead and heavy metal contamination are major concerns, especially in urban areas. However, even in contaminated sites, there are ways to garden safely. This guide can help you decide what to plant to be less vulnerable: http://cwmi.css.cornell.edu/Soil_Contaminants.pdf. Building raised beds, maintaining neutral soil pH, and importing soil are strategies that have been used successfully to mitigate lead contamination. Ensuring that native soil is covered with mulch or vegetation will reduce cross contamination from dust. In some municipalities, including the City of Rochester, gardening in raised beds on city-owned land is required. See more about constructing raised beds in the Design Phase section below.

Freshly sheet mulched garden space at Enfield Elementary

Finally, it is important to protect the site from common **animal pests** such as deer, groundhogs, rabbits, and rodents. Before you get started, decide how much gardening space is desired. Make sure you account for some expansion of the garden in the first few years. Many urban sites do not have to worry about deer, but may have to install individual fences around beds to protect against smaller animals. Four-foot-high chicken wire fencing is relatively easy to install and protects against many common garden pests. Many urban and suburban sites may have to employ deer fencing in order to protect their gardens. Standard deer fencing is 7 to 8 feet tall and needs to be suspended from sturdy posts. Oesco, Inc. offers a lightweight option called Smart Net that can be suspended from high tensile wire and reduces the number of posts required for the fence. http://www.oescoinc.com/orchard-nursery/smart-net.html Unmilled black locust posts are a fine choice for deer fences as they are highly rot resistant and easily sourced in many Northeastern and

Mid-Western localities. Other regions have other rot resistant hardwoods that are appropriate. Pressure treated posts may be the only option in your locality but be aware of the potential for soil contamination from leaching near these posts. Consult with your local fencing experts and if your budget allows, hire professionals to install the proper fence. Of all expenses involved in gardening, fencing and water installation may be the most important projects.

ICSD staff run an orientation for the summer Farm to Table program at BJM School Garden

Tool storage on site makes for a much more efficient and successful garden site. Tool storage need not be elaborate or expensive but security is crucial. Tool storage and types of tools needed are discussed in a later section.

The ultimate size of your garden depends on many factors including space available, budget and crop selection. It is highly recommended to start on the smaller side and grow your site as time, human capital, money and gardening expertise becomes available. If you have an elaborate site design, try to determine how to phase the development in such a way as to maximize the resources you have available.

Human capital is equally important to the success of garden sites. There should be at least one person dedicated to making sure the site is properly managed, but a dedicated team of 2-3 people who have garden know-how and time will ensure that management operations run smoothly. It is also important to consider who the gardeners, garden users and recipients of produce will be and engage them early in the process. Garden development offers many educational opportunities and hands-on experiences. By engaging a broad audience of garden users in the development phase, you will also be building overall community capacity and skill level. The Master Gardener Volunteer (MGV) program provides gardening skills training to interested community members who can be linked with sites and provide regular or as-needed technical expertise. Experienced gardeners can mentor beginners and often have a wealth of knowledge about local planting dates, pests and skills specific to each crop that can be passed on. Unskilled volunteers, garden members, students, and neighbors can also assist with basic tasks such as weeding and watering with minimal guidance.

When searching for assistance with your garden work, don't overlook local universities as well as the Sherriff's Department. Both have individuals who have required community service hours.

There are an abundance of community service organizations, including Rotary, Kiwanis, and 4H that are often searching for projects to support. These groups are also very good at raising funds and may also be able to provide a non-profit umbrella for funds dedicated to garden projects to pass through. Establishing a non-profit organization is expensive and time consuming and therefore may not be a practical avenue for start-up projects. Schools, on the other hand, have non-profit status built in as well as infrastructure and maintenance crews who may be able to assist with garden development and management activities. It is important to approach them early in the planning stages and add them to your list of assets rather than imposing projects on them after the fact. They can become some of your biggest supporters, but if not approached with respect and tact, they can become your biggest obstacles.

Maintenance staff assists during workday at Newfield School Garden

Local food pantries can also be great partners to both school and community gardens. They provide

a great outlet for excess produce and help many people in the community who are dealing with food insecurity. Many food pantries also have access to funds which may be utilized for gardens and other projects offering solutions to food insecurity. They may also have access to a pool of willing volunteers who can assist with garden construction, maintenance, and harvesting. Churches often have associated food pantries, members who are seeking volunteer opportunities and designated funds for community service projects.

As mentioned above, garden projects will need **funding** in order to advance. An extensive list of funding organizations that support garden projects can be found in the Appendix. There are many sources of funding specifically dedicated to school and community garden projects. Local big box stores also have local giving programs that can be utilized for tools and supplies. If your project is covered by a non-profit organization, you will also be able to engage in traditional fundraising activities in order to meet your funding goals. Fundraisers can also be a great way to engage with your community, build excitement about the project, and generate publicity and help spread the word about what you are doing. Online fundraising is a newer way to generate money for your project and there are many online crowdsourcing platforms which can be utilized to raise money. It is important that if you go this route that you have a dedicated team and some experience with spreading the word through social media and email. One platform we have used is called Generosity; it is specifically geared toward non-profit fundraising. https://www.generosity.com/

One final note: it is important when establishing community gardens to be aware of any **local laws or ordinances** that apply to your project. For example, some municipalities forbid the use of native soil for gardening on city-owned properties due to liability concerns over soil contamination. In this case raised beds will need to be part of your plan. There may also be regulations in place requiring that community gardens carry liability insurance. (The American Community Garden Association can provide insurance in these cases and information can be found here: https://communitygarden.org/programs/garden-insurance.) Your municipality may also have considerations for other important garden characteristics like water access or restrictions about structures that can be housed on the property.

Gardener's Reading List

The Edible Landscape *by Emily Tepe*

4 Season Harvest *by Elliot Coleman*

Permaculture: A Designers Manual

By Bill Mollison and David Holmgren

Rodale's Ultimate Encyclopedia of Organic Gardening

Gaia's Garden *by Toby Hemminway*

How to Grow More Vegetables Than You Ever Thought Possible on Less Land Than You Can Imagine *by John Jevons*

Designing and Maintaining Your Edible Landscape Naturally *by Robert Kourik*

Edible Landscaping *by Roselind Creasy*

The Beautiful Edible Garden

by Leslie Bennet and Stefani Bittner

The Vegetable Gardeners Bible

by Edward C. Smith

Garden Design

There is not one-size-fits all garden design. Start small and remember, it's much cheaper to make your mistakes on paper, so take your time when working on your design. Try out different options and layouts, and get comfortable with everything before you break ground. Measure your site and create a base map on graph paper. You can make cutouts of different design elements such as raised beds, fruit trees and shrubs, flower gardens, tool sheds, compost piles, and herb spirals. This way, you can move around the different elements to create a functional layout that fits within the space. A good design will maximize yield, be aesthetically pleasing, and will allow for good circulation throughout your garden. Your design will also allow you to budget accurately before you begin purchasing materials.

There are many resources and books about garden design so make sure you do plenty of research during

Garden Design Elements

Raised beds: *An 8 ft. x 4 ft. x 16 in. raised bed is highly functional and just about the right size for one classroom or one community garden plot. Raised beds can be built to any size and shape, but gardeners should be able to reach the middle of the bed easily, so 4 feet is about the widest they should be built.*

Tool sheds: *There are many prefabricated tool sheds on the market and plans for simple DIY sheds online. A typical garden shed is 6 ft. x 3 ft. When considering what size and type of tool shed to choose, you should have a list of all the tools and other items you plan to store, with approximate space needs. A list of tools can be found on page XX.*

Herb spirals: *An herb spiral is a mounded garden bed shaped like a spiral that can provide different moist and dry habitats for dozens of herb plants. The spiral is typically an 8 ft. diameter circle.*

Compost bins: *A three-bin compost bin can be easily constructed with decking screws and wood. Recycled pallets are a good, inexpensive source of wood for compost bins. Once assembled, a three-bin composter is 3 ft. x 9 ft. Many other bins both DIY and prefab are available on the market or online. Do some research and find out which system might work best for your site. For educational purposes, it may be worthwhile to have more than one type of composter on site as a demonstration of different possibilities.*

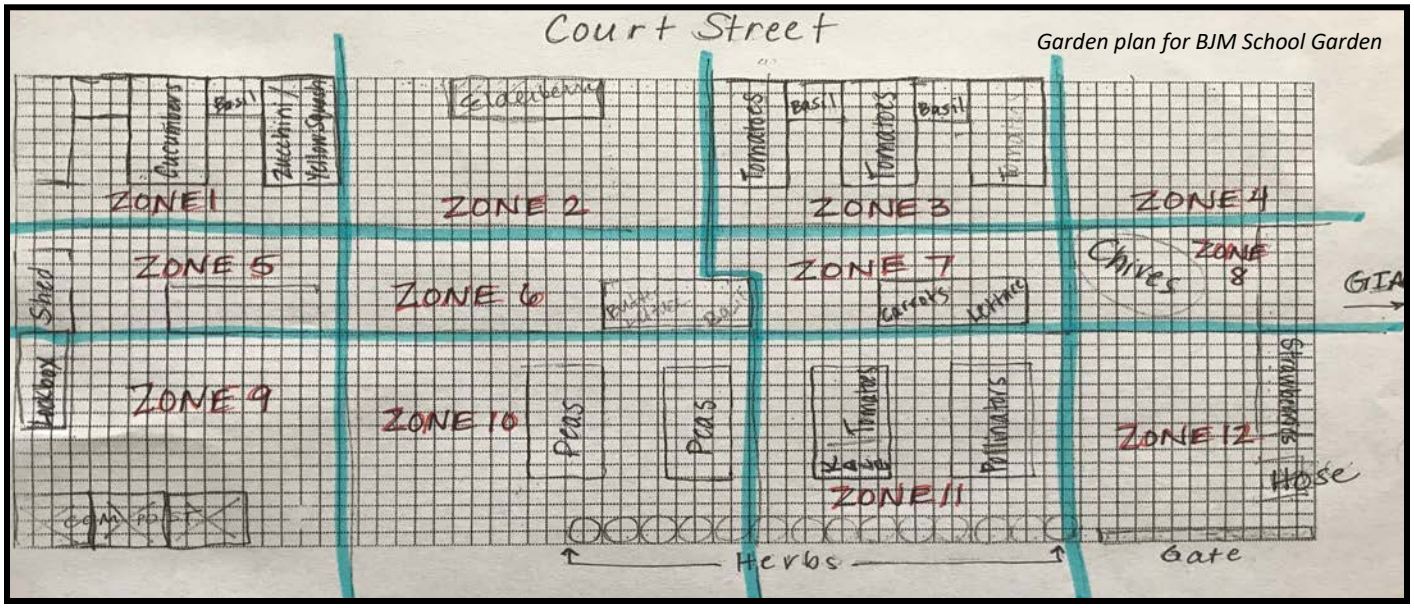
Pathways: *paths should be a least wide enough to turn around a wheelbarrow (3') and can be mulched with woodchips most cheaply or layered with gravel or paved with flagstone or pavers depending on your budget*

Fruit trees and berry bushes: *Dwarf and super dwarf fruit trees can be maintained at 6 ft. diameter and berry bushes can be maintained at 4 ft. or smaller depending on the variety.*

Arbors*: Arbors are wooden pole structures that create shade and act as trellises for fruiting vines such as grapes or hardy kiwis. They can be built to any dimensions and typically feature posts on 8 ft. or 10 ft.centers. Arbors are are usually squares or rectangles but can be constructed as any type of geometric shape.*

Rain collection/catchment: *Rain barrels and water tanks can be installed adjacent to downspouts on nearby buildings or your garden shed. They can be constructed from garbage cans, recycled food-grade barrels, recycled 300 gallon cube tanks or custom water tanks. Check out https://morningchores.com/rainwater-harvesting/ for several examples of DIY rainwater harvesting systems.*

Benches and seating areas: *Places to sit invite people to enjoy your garden space. Seating areas also allow gardens to serve as outdoor classrooms. Picnic tables can be used for outdoor food preparation and hands-on activities, and benches can be moved around depending on what you are using them for. Straw bales and wooden stumps offer affordable and functional seating options.*



this phase of development including planting requirements for different crops, plant spacing for vegetables and fruit crops, cost and qualities of different materials, costs of bulk materials such as mulch and soil, types and cost of fencing and lumber, and designs for any permanent features you would like to incorporate such as sheds, arbors and outdoor furniture. The planning stage can be rewarding in itself as you put thoughts and new ideas down on paper.

Site Preparation

Once your goals have been clearly articulated, human assets mobilized, funding secured, and design finalized, it is time to begin **site preparation**. Provided that you are starting out with healthy uncontaminated soil, growing plants in native soil is by far the most affordable way to establish a garden. Soil preparation in this case can be done in one of two ways: **tilling** and **sheet mulching**.

If you choose to **till** your garden area, you must first remove existing vegetation. If the site has existing woody species, any trees and shrubs that you do not wish to remain must be cut down and their stumps and root systems removed. Many branches can be ground into mulch which can be saved for later use to cover pathways and provide weed control under fences. Large logs can also be saved for creating stump stools or log benches, cut into thin rounds to make pathways, incorporated into natural play features or split for firewood.

A garden being established in a grassy area is relatively straightforward. Remove the existing sod from the entire garden area and then till the soil either with hand shovels or with a mechanical rototiller. **Double digging** is a technique that loosens two layers of soil deep down and incorporates compost in order to create lasting fertility. This method is very labor intensive and may not be feasible for gardeners with physical limitations.

Kids move cardboard into the garden for sheet mulching at BJM Elementary

Another soil preparation technique is known as **sheet mulching** or lasagna composting, and involves layering cardboard, biodegradable landscape paper, newspaper or even old cotton sheets over the gardening area. This is followed by layers of finished compost or manure then wood chips, straw mulch or other high carbon material. This technique offers many advantages to traditional tilling. In some cases it will permanently eradicate existing vegetation and locks away weed seeds deep under the layers for the long term. It adds a nice layer of new fertile soil on top of the existing layers, provides a highly absorbent medium for water retention and provides a weed free area for planting that will remain so for the first few months after planting. It makes it much easier to remove weeds when they do sprout, because the newly created soil is so loose and moist. For more information on how to sheet mulch visit: http://www.wildwillowdesign.com/2011/06/three-ways-to-sheet-mulch/

Sheet mulching in progress utilizing cardboard and mulch to smother grass and establish a new garden, RCSD School #29

An alternative to tilling or sheet mulching is to build **raised beds**. While significantly more expensive than the previous methods, raised beds offer many advantages and are often required for gardening on contaminated sites. Raised beds allow you to bring in fertile soil, don't require gardeners to bend over as far, keep the soil loose and compacted and clearly define the planting area.

An 8 ft. x 4 ft. x 16 in. raised bed is

highly functional and just about the right size for one classroom or one community garden plot. These beds require 1.5 cubic yards of material to fill. You

A newly constructed 8'x4'x16" raised bed

will need six 8 ft. x 8 in. x 2 in. boards and one 2 in. x 4 in. rough cut boards and a one pound box of 2 1/2 to 3 inch decking screws to build one bed. Raised beds can be built to any size and shape, but gardeners should be able to reach the middle of the bed easily; therefore 4 ft. is about the widest they should be built. They can be built of many purchased and reused materials including lumber, landscape pavers, stone, brick, concrete, logs, straw bales, and more. When using wood, beware of pressure-treated lumber. Look for rot-resistant lumber available in your area. Black Locust, Larch, Hemlock or Cedar lumber are preferred.

A depth of 8 in. is sufficient for growth and is the cheapest option. Deeper beds allow for better root growth but are more costly in terms of building materials and soil. Beds can be filled with potting soil or a 50/50 mix of sifter topsoil and compost. Ultimately, the dimensions of your raised beds should be a reflection of your goals, the space available, and your budget. Creative designs can take advantage of marginal spaces and can also add artistic flair to your garden.

Accessibility is often overlooked, but if we truly hope to make our gardens inclusive we should be thinking about how folks with differing abilities can still enjoy the garden. It is also important to make sure that the site is easily accessible to wheelchairs and strollers if is open to the general public. ADA (Americans with Disabilities Act) guidelines require three to four foot-wide hard pathways constructed of pavers or packed crushed stone for wheelchair access and elevated raised beds with 27 to 35 in. of clearance underneath, so that wheelchair users can roll right up to the bed. Beds can be constructed on stilts relatively easily for this purpose. There are many designs for wheelchair accessible raised beds, including a few that can be found here: https://buildingraisedbeds.com/raised-beds-for-wheelchair-users.

Small scale gardens, especially in urban environments, may utilize **container gardening** as an alternative to raised beds. Any suitable container can be filled with the same material as raised beds and allow for gardening in very small spaces. Suitable containers include large nursery pots, 5 gallon buckets with holes drilled in the bottom for drainage, milk crates and even old bathtubs. This is a great way to get started gardening, especially for renters and apartment dwellers who do not have access to any land.

Fencing may be required once the garden is prepared, depending on wildlife pressure. Once you have determined how much area you will require, measure the perimeter of the space before you begin ordering fencing material. Fencing can be as simple as chicken wire attached to t-posts or as complicated as an 8 ft. welded wire deer fence. If aesthetics are a major concern, a more formal wooden fence can be constructed, but the cost may be prohibitive for many projects. The most affordable option for

Brandon Wakeman works on installing a deer Fence at Booker T. Washington Community Garden in Auburn

sites with significant deer pressure is 7½ ft. sus-

pended deer netting hung from high tensile wire. Rot-resistant posts 10 ft. tall are required if using this method, so deep post holes will need to be excavated before construction. A hole auger is the easiest way to dig, and these machines can be rented from some home improvement outlets. If this is not an option, holes can be dug using posthole diggers and a digging bar. This can be very time consuming and laborious, especially if your soil has large rocks. If it is in your budget, it may make more sense to hire a professional fencing company to undertake this phase of the project.

As mentioned before, **water** access is a primary consideration when determining location and establishing your garden. Ideally the garden site is adjacent to a nearby building with existing water service or near an existing water hydrant. If not you will need to determine the best way to bring water to your site. If you have a pond or creek nearby, you may be able to pump water to the site using an electric, solar or gas-powered water pump but this can be difficult to maintain. Another option is to build an elevated tank that can be filled by your local fire department. You can also install a rain collection (also called a catchment system) off of a nearby rooftop. For this you will need one or more water barrels or other storage tank to catch the water, a downspout and a first flush system to remove debris and pollution that washes off the roof at the beginning of a rain event. Rainwater is free and is actually better for plants than chlorinated municipal water. The most expensive option for bringing water to your garden is to install new water service, but this may be required depending on your site. This requires a hook up to the closest water main, excavation from the main to the site, a water line from the main and a water hydrant. This can easily run thousands of dollars, so make sure you have exhausted all other options before you install new water service.

Rainwater system at Hornell YMCA

One way to conserve water is to install **drip irrigation**. Drip irrigation delivers water directly to plant roots and under any mulch in the garden beds through a series of interconnected tubing and water emitters tied to a water source. Drip prevents evaporation and discourages weed growth that can result from top watering with a hose or sprinkler. These systems can be set on a timer to provide regular water or disabled if there has been sufficient rain. Most vegetables require ½ inch of water per week for best growth, so irrigation can be crucial in arid or semi-arid areas and anywhere during drought conditions.

Every garden requires different types of **tools**, from hammers and drills during the construction phase to shovels and wheelbarrows during and after construction. Each tool has a specific set of functions, so it is important to get to know all the different types of tools that might be used in the garden and begin making a list of the tools you will need. It could be helpful at this point to visit a local lawn and garden center and look through their selection

Here is a sample shopping list for tools:

10 hand trowels (one per gardener)
10 pairs garden gloves
4 hand forks
2 digging knives
2 short handle shovels
2 spade shovels
2 flat shovels
1 edging shovel
2 digging forks
1 pitch fork
2 hard rakes
1 leaf rake
1 lever lock pruner
1 pair loppers
2 wheel barrows
1 heavy duty hose
3 watering cans
1 sprayer nozzle
10 five-gallon buckets for moving soil and mulch or for creating container gardens

and talk to their expert staff if you have any questions. Your complete list of tools will be determined by the type of garden you have created and the number of users you can expect at any given time. Tools can be expensive, but generally the higher the cost, the higher the quality. It's better to pay more for a durable tool than frequently replace broken ones. Again, cost may be prohibitive for some projects, so you may need to put a call out to your community for tool donations. Local big box home improvement stores have local giving programs and usually give their awards in the form of gift cards.

Your tools will require a secure place to store them. Some sites may be located near a building with space available for tool storage. Other sites may need to buy or construct a **tool shed**. There are many prefabricated options available for plastic, metal or wooden sheds. You will need to consider how much space you will require once you have made your tool list. Many local service organizations support build projects like sheds, so do a little research and ask around. You may be able to get a shed donated or constructed by one of these groups. School gardens may be able to enlist a high school tech department for this project and save money by eliminating the labor cost. If you go this route, you have the opportunity to design the perfect structure to suit your needs.

Some phases of your project might seem very daunting at the outset but this can be a great opportunity to rally the community to your cause. School garden projects can enlist the power of their students to quickly take care of tasks such as mulching or filling beds with soil. During a recent gardening program with elementary school children, two groups of 20 1st - 5th graders were able to fill an entire 4 ft. x 8 ft. x 16 in. raised bed utilizing 5-gallon buckets to move soil in less than an hour. Large groups of children can efficiently mulch large areas provided with proper guidance and the right tools.

Organizing **community build events** will allow you to accomplish large tasks in a short amount of time and also build excitement and support for your project. When organizing this type of event you will need to outline all the tasks you wish to accomplish, determine what tools and materials you will need to complete them and estimate the number of people their completion will require. You will need to publicize your event well in advance so that people can clear their calendars for the day. Try to have people RSVP so that you can get a rough estimate of the number of volunteers expected, so that you can make sure you have enough tools available and provide enough food and water to keep everybody happy. If you have more than one task to accomplish, try to assign a job boss for each task and create a

Community Build Day at Newfield School Garden

DO NOT COMPOST!!!

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 products will attract animals if not done correctly.

Glossy paper, plastics of any kind, chemicals, tomatoes or plants with blight or other diseases, weeds that have gone to seed.

Any bioplastics or products that say "compostable" or "biodegradable". These are generally meant for commercial systems and will not have the time to break down in your compost.

No pet or human waste. Aged animal manure is best!

timeline so that everything happens smoothly and in the correct order.

Composting

Compost - a dark, crumbly, earthy-smelling form of decomposing organic matter - is the magical secret ingredient that makes all garden soil hum with life and vigor. It is critical to an organic 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. It is breakfast, lunch and dinner for soil critters and plants in the garden because it contains important nutrients that plants need to grow.

If you cannot start a compost bin, or cannot start one right now, mushroom or leaf compost are ideal and can be purchased from landscape supply stores. We recommend getting an annual bulk delivery of at least 1 cubic yard. It would take dozens of 40-lb bags of compost to cover the same amount of area.

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

A three-bin outdoor composting system is very appropriate for a good-sized school or community garden. This system can take care of larger amounts of fruit and veggie scraps and also garden and yard trimmings. They are also easier to turn and can be expanded in the future as needed. The non-active bins can hold carbon material (leaves, untreated sawdust) or finishing compost. The bin structure also allows everyone to see the compost process; however, it will take three months to a year before you have a finished product. The system can be created using pallets which can be procured for free. It is important to make sure the bin is rodent proof. This can be accomplished by in-

3-bin composter at Newfield School Garden

Browns

Yard or Garden debris

Hay or straw

Wood chips

Grass clippings, brown

Weeds and other garden waste

Shredded newspaper or brown paper (bags, wrapping, etc.)

Leaves, dry and brown

Sawdust

Composted manure

Greens

Vegetable and fruit peels and seeds

Egg shells (crumbled ideally)

Any vegetable or fruit scraps

Coffee grounds and filters, tea bags

Breads and grains

Stems, leaves, fruits you're not going to eat, etc.

Fresh Manure

stalling ¼ inch hardware cloth (a wire mesh material) on the ground and around the sides of the bin.

What can I compost?

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. "BROWNS" are mainly made of carbon and generally brown in color. A compost bin should always have **at least** three times as many browns as greens. You generally can't add too much carbon. (Some research shows the ratio is better at 30:1!) 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 the ingredients that fall into the green and brown categories. You do not have to add each ingredient to your bin. The smaller the size/pieces, the better and faster it will compost.

Collecting food scraps can be done on a small scale by having a 5-gallon bucket for one or two classrooms to start with in the cafeteria or a couple gardeners. A future goal could be something like the below picture, with the whole cafeteria collecting their food scraps (and recycling as well)!

It is very important to have clear signage and directions at the compost bins. The signage should include a step-by-step list on how to empty the food scraps and layer the carbon material, as well as recording information. It is also important to have signage for the adult volunteer who comes to turn the pile and add coffee grounds/water if needed. Also having a troubleshooting sheet on hand for how to deal with any problem situations (e.g. odor, low heat, flies) can be very helpful for novices.

Vermicomposting

Composting using worms can be done utilizing a variety of technologies and is an especially good small-scale way to introduce the idea of composting. Small worm bins can be placed in classrooms and monitored by the students. A worm bin can take small amounts of food scraps and produces a great soil amendment. The worms must be kept within a defined temperature range of 50° to 80° F.

In general, the worm to daily food ratio is 2:1 (two pounds of worms can eat

Red Wiggler worms in a vermicompost system

about one pound of food waste in a day). There are institutional style bins in which material is added to the top of the bin and finished worm castings are removed through a tray on the bottom of the bin, but bins can also be constructed for a lot less money with wood or two Rubbermaid tubs with holes drilled in them.

For more information about composting, visit http://www.ccetompkins.org/compost or www.howtocompost.org.

Garden Management

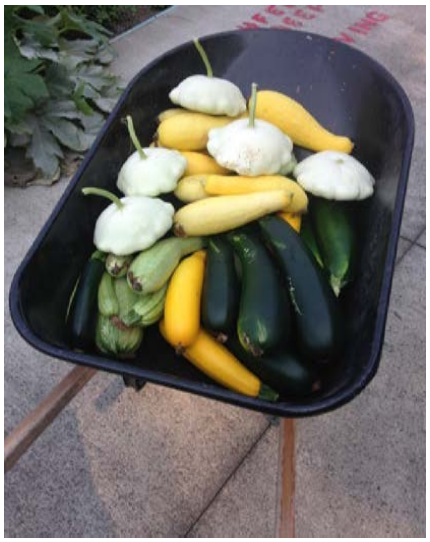
Once you have completed the hard part of your project during the construction phase, it is time to move from development to management. It is highly important that you have a management plan in place once you begin planting. Many projects are able to make big accomplishments early on, but they fall flat as that initial energy wains because they have no plan in place for the care and maintenance of their garden.

The first step is to plant your crops. Many vegetables are well suited to planting from seed and others need to be planted as starts. Check your local planting calendar to make sure you are planting everything during the right time of the season. If you plan for all three seasons, you can tremendously increase your harvest. See the planting chart Appendix E, p. 41 for details on planting dates for specific crops or simply read the back of your seed packets. In the Northeast, we have a relatively limited window for planting crops, so it is crucial that things are planted in a timely fashion. Spring planting begins in March and summer crops can begin going in in May. Fall planting is often overlooked and generally happens between July and September. Again, make sure that you research the planting and space requirements of each crop. When using seeds, follow the planting instructions on the seed packet.

Once your crops have been planted they will require regular **watering**. The natural precipitation that we receive varies greatly from year to year, so make sure you have a watering schedule and volunteers assigned to water regularly. A watering schedule can be shared online using various platforms or can be posted at the garden. **Weeding and thinning** are very important in order to maximize crop yields. Make sure everyone involved in weeding and thinning can identify garden crops and common garden weeds. These people should also know the proper spacing of plants for thinning. Regularly using hoes to remove weeds when they are at the seedling phase is by far the easiest and most efficient form of weed control. During a rainy warm summer weeds can quickly overtake a garden if you don't keep up with them. Make sure you have a compost pile for garden waste because weeds can go to seed even after they are pulled and can resprout from roots as well. Some noxious plants like bindweed should be left to dry out before they are disposed of in the compost pile as they will often resprout once in the pile and contaminate the finished product.

Pests and diseases should also be monitored. Some pests can be removed by hand while others will require spraying. Organic practices are best for health and safety reasons. There are specific treatments for each pest and disease and many of these can be produced cheaply from common household ingredients. Books on organic gardening often have detailed descriptions of pests and diseases for easy identification, as well as recipes for and recommendations for treatments. If you are not sure what disease or pest is affecting your garden, you can take pictures or samples to your local Cooperative Extension office. Many Extension offices also have growers' hotlines run by well-trained Master Gardeners.

Regular monitoring of the garden is very important in order to make sure weeds are being removed and crops are getting enough water. This will also allow you to **harvest your crops** at their peak. Crops like squash and lettuce can quickly get too big or too bitter if they are overripe. Once the crops start rolling in you'll want to make sure you know how to use them. Finger Lakes Eat Smart New York has lots of tasty and nutritious recipes available on our website at www.fingerlakeseatsmartnewyork.org.



Freshly harvested summer squash

Tracking garden yield *(see Appendix D: Garden Harvest Log p. 40)* can be a good way to document the variety of produce at your garden, produce distribution patterns, and logging harvest weight will be important

if yield is an indicator of success at your site. This information may also be helpful to have on hand if applying for additional funding or advocating for your site. See available data collection toolkits like https://farmingconcrete.org/toolkit/ to help you implement harvest monitoring systems.

Due to the shorter growing season of the Northeast, many gardeners utilize **season extension** techniques to extend the harvest. Using products such as floating row cover; a synthetic lightweight translucent fabric, or even old sheets, crops can be protected from light frost. You can also utilize more durable techniques such as cold frames to keep your crops warm enough to keep growing even after it snows. Many hardier crops such as kale, broccoli, and leeks can be overwintered by covering them with deep mulch. They will typically keep growing whenever the temperature rises above freezing and can be harvested in winter or in spring. Many of these crops actually have better flavor after a few frosts.

Once the growing season has concluded, you need to put your garden to bed for the winter. Any plant waste should be removed from your beds and composted, and the beds should be mulched or sown with winter cover crops such as winter rye, wheat or clover. Cover crops will protect your soil from erosion and can be incorporated back into the soil the following spring. This is a natural and effective way to keep your soil protected and fertile. You can also consider leaving plant waste removal until spring, however, as these dead stalks provide excellent habitat for overwintering spiders and beneficial insects. It is also a good practice to refrain from removing spring weeds such as dandelions, because they provide an early and necessary food source for bees.

Tech teacher Rick Ketchum stands in front of high tunnel built by his class at Newfield High School

Programming

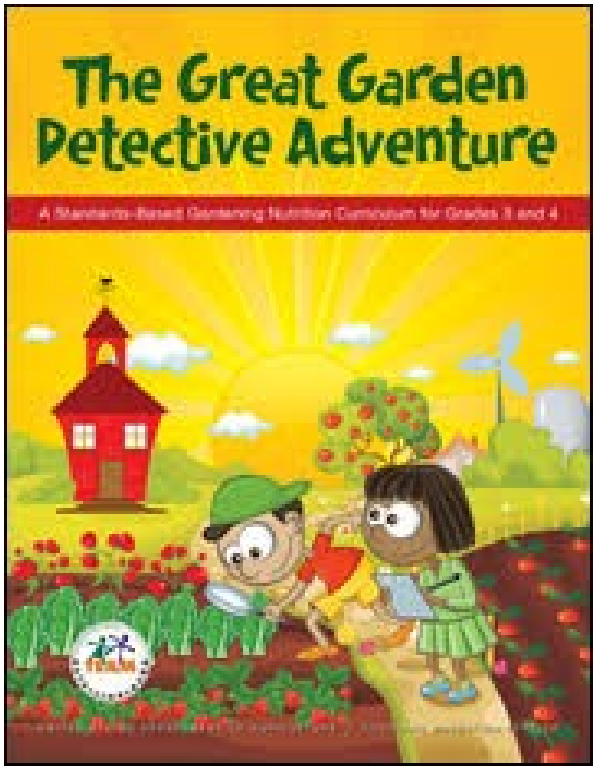
Public gardens typically feature some kind of regular programming to engage and educate the public. With school and community gardens, educational programming is essential to success. Many gardeners in these settings are experiencing a food garden for the first time and therefore need the educational support required to learn the skills and confidence they need to become successful gardeners. Many of these gardeners may also new to the idea of incorporating fresh produce into their cooking. Nutrition education is the perfect pairing with hands-on garden-based skill building. Contact your local Cooperative Extension to learn more.

Hands-on gardening education can be tailored to suit specific age groups. Introduce basic gardening concepts such as plant parts and life cycles to pre-K and elementary children. In-depth lessons on soils and plant physiology are appropriate for high school -aged students. Older youth and adults also benefit

from hands-on experiences which support garden construction and management. Every project that is needed to create a sustainable garden can be turned into an educational event.

School Gardens

School gardens offer an exciting educational opportunity for any age group. They can be used to compliment nearly any area of study, while also offering hands-on experiences where students can learn valuable life skills and engage in community service. School gardens also provide an alternative to classroom settings for children with differing needs. In addition to providing an opportunity to demonstrate classroom concepts, teachers report that gardens are effective behavioral management and confidence-building tools; gardening can provide immediate, concrete student successes that build skills and positively impact student performance both in and out of the classroom. In fact, it is often the most troubled kids who are the most focused and willing participants in garden work.



Curriculum

There are dozens of curricula to choose from for your school gardening education programs. These curricula can be used as a series or you can mix and match individual lessons and activities to taylor your garden education experiences to your specific audience. Below is an overview of some of the research-based curricula used successfully by Finger Lakes Eat Smart NY staff:

Title: The Great Garden Detective Adventure
Author: USDA
Audience: Youth, 3rd and 4th grades (flexible/adaptable)
Access: free pdfs online at https://www.fns.usda.gov/tn/great-garden-detective-adventure-standards-based-gardening-nutrition-curriculum-grades-3-and-4; can also order a free print copy

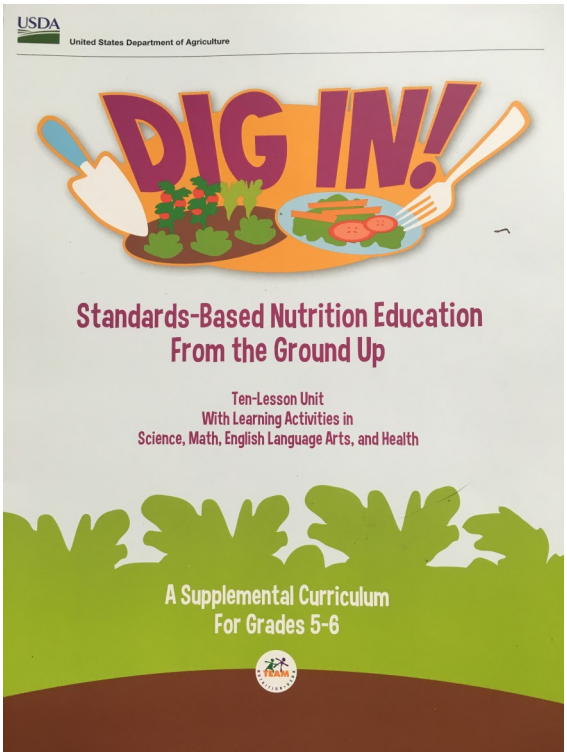
Description: Great Garden Detective is a multi-dimensional garden-based nutrition curriculum that can either be implemented at its full scale or in select ways. There are student and parent newsletters, games, bulletin board templates, and suggestions for connecting lessons to both the community and the school food service. Not only does each lesson include subject connections, it also includes standards alignments. This curriculum is meant to be sequential, but could be used as one-offs as well.

Title: Grow It, Try It, Like It
Author: USDA
Audience: Youth, early childhood
Access: free pdfs online at https://www.fns.usda.gov/tn/grow-it; can also order a free print copy (comes with DVD and CD-ROM)

Description: Grow It, Try It, Like It uses three fruits and three vegetables to introduce children to nutrition and gardening. There are a few themed, mostly hands-on activities for each fruit and vegetable. Planting activities, nutrition education activities to discuss MyPlate, and parent/child activities for home are included as well.

Title: Dig In!
Author: USDA
Audience: Youth, 5th and 6th grades (flexible/adaptable)
Access: free pdfs online at https://www.fns.usda.gov/tn/dig-lessons; can also order a free print copy

Description: Dig In! is a garden-based nutrition-focused curriculum engaging students in growing,

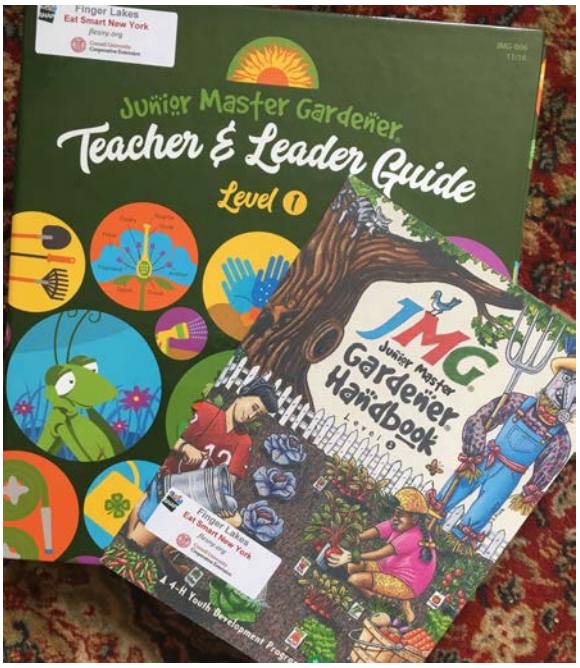


harvesting, tasting, and learning about fruits and vegetables. There are subject connections (ELA, science, social studies, math, and/or health) included with each lesson. These are not just lessons for the school health educator! The curriculum is flexible in that students would benefit from being exposed to all the lessons or you can pick and choose.

Title: The People's Garden
Author: USDA and Cornell Garden-Based Learning
Audience: Youth, grades 2-5, and resources for all
Access: http://peoplesgarden.wsu.edu/toolkit/

Description: This comprehensive curriculum has everything from lessons to guides to resources. Ten curricula were analyzed and lessons selected to complete this project. Originally designed as a 20-lesson weekly program, the curriculum is flexible and could be used in other ways. Common Core was released while this was in development and therefore the standards are aligned with a compendium developed by an independent nonprofit. Even if the lessons are not useful to you, the toolkit is an excellent companion to school gardening education.

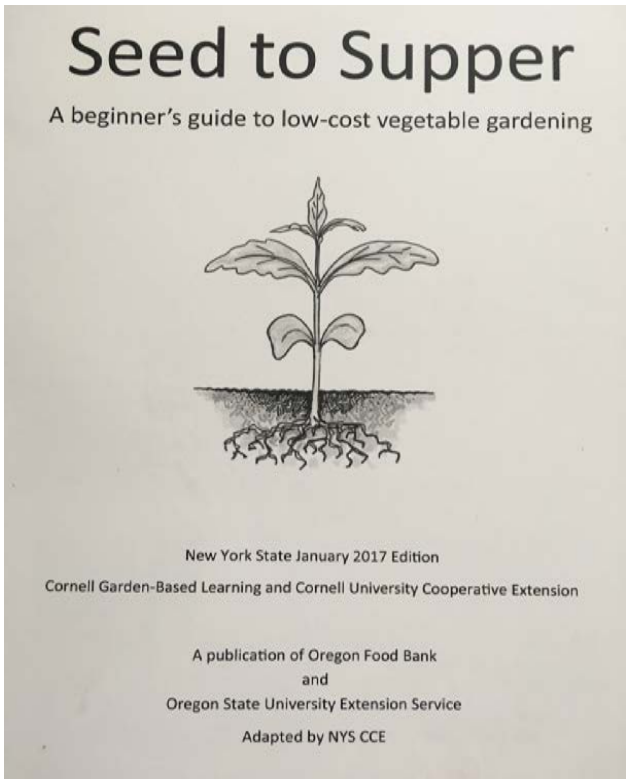
Title: Junior Master Gardener (JMG)
Author: Texas A&M University
Audience: Youth: Elementary (Level One), Middle School (Level Two- Operation Thistle and Operation WATER)
Access: Must purchase guide(s) at http://jmgkids.us/curriculum/. One teacher & leader guide and one student guide (for Level One) per curriculum should be sufficient.



Description: This curriculum is focused on building gardening skills for students. The curriculum also helps develop life skills, includes career exploration, and provides opportunities for students to expand their experience with service-learning projects. The lessons are hands-on and focused on science exploration, but many can be completed within a classroom setting. Students have the opportunity to earn certifications as they work through the chapters, or lessons can be utilized individually.

Title: Seed to Supper
Author: Cornell University (adapted from Oregon State University)
Audience: Adults
Access: Oregon version is available online as free pdfs at https://www.oregonfoodbank.org/our-work/programs/education/gardening/ and NY version is available in print by request through CCE (Spanish and English).

Description: Seed to Supper is a series of six lessons, designed to be taught as six classes but with some flexibility, for beginning gardeners who want to learn how to grow food on a budget. The activities can be taught as a combination of classroom



time and hands-on activities. Topics include planning, preparing/managing soil, planting, garden maintenance, pests and diseases, and harvesting.

Kids in the garden

Young people can have many valuable learning experiences but they also present special challenges. Kids are still developing fine motor skills, so it is important to tailor activities based on developmental skill levels. Kids have trouble controlling their bodies and their excitement sometimes, so it is important to go over safety concerns prior to entering the garden and firmly reinforce safety instructions as issues arise. Kids are fully capable of performing most gardening activities as long as they are broken up into small and manageable tasks. The following list is organized in roughly chronological order beginning with winter-appropriate indoor activities then moving outdoors with spring, summer and fall activities.

Kids Gardening Activities

Seed poll: Using three different colored sticky notes, students are asked to rate their top three vegetables, write the name of each on the #1, #2 and #3 sticky note along with a picture. The sticky notes are then affixed to a wall, smart board or window in alphabetical order eventually forming a bar graph indicating which vegetables are the most popular for the entire class. This activity can be used to inform decisions about what to plant in your school garden.

Seed Sale: A seed sale can be a great way to earn a modest amount of money toward your garden project. Fedco Seeds (www.fedcoseeds.com) offers a discount and a few different formats for school seed sales including the option to order seeds in bulk and repack into your own custom packets. Students can each illustrate one variety of vegetable utilizing a photo reference which can then be transferred to a shipping label. Once seeds arrive, students can affix their custom labels to coin envelopes then measure or count seeds and pack them. They can be sold at the school or pre-ordered as with many school fundraisers.


Seed display at BJM Elementary

Seed strips: Seed strips are thin strips of paper with lines printed on them that are the proper spacing for seeding distances for specific crops. Kids can glue one seed to each line; once the strips have dried they can be planted end-to-end in furrows just as one would plant seeds.

Planting indoors: Many crops need to be started indoors and need plenty of light to grow well. You can find plans for an indoor growing rack in the appendix. Locate an area that can be easily swept up, and prepare with a bucket of pre-moistened seed starting mix, pots, cell trays or seed trays, seeds, plant tags, and pencils. Give children clear instructions on how to plant specific crops, open seed packets for them, and distribute enough seeds for each child to plant a few.

Microgreens: Most greens and other crops such as peas and sunflowers can be planted densely in trays and harvested in a few weeks with scissors

From l to r: students harvest kale at Hornell YMCA Community Garden, Seed poll forming a bar graph, seed strips and sprout experiment

when they reach the desired size. They can be grown on a sunny window sill or growing rack.

Sprouts: Sprouts can be grown easily in mason jars with ring top lids. Purchase a small section of window screen and utilize the ring as a template to trace and cut out round sections of screen. Place the screen in the ring, place a tablespoon or two of desired sprouting seeds--such as mung beans or alfalfa--in the jar, then soak seeds overnight. Drain water then rinse seeds twice a day until they reach the desired size, usually in a week to ten days.

Bed prep: With small hand trowels and hand forks, kids can remove weeds and break up and loosen soil to prepare beds for planting seeds and starts. This is an excellent time to have the kids incorporate potting soil, compost, or peat moss into the bed, adding organic matter and creating a light and fluffy medium for seeds.

Sheet mulching: Stockpile plenty of cardboard near the space to be sheet mulched. Kids can help remove tape and break boxes open at the seams. Appliance boxes are great for covering a large area quickly. Lay down cardboard and overlap over any gaps so that a continuous layer of cardboard covers the whole area. Kids can deposit compost or soil onto the cardboard while an adult spreads it evenly with a hard rake.

Mulching pathways: Remove weeds from pathways then have kids fill 5 gallon buckets with mulch. Areas with persistent weeds can be layered with cardboard, just as with sheet mulching, and covered with wood chips. Spread 2 to 4 inches of mulch over pathways for persistent weed control.

Filling raised beds: Instruct kids to fill 5 gallon buckets or wheelbarrows half full utilizing small shovels or hand trowels. Kids can move buckets and dump them in raised beds solo or in pairs or can move wheelbarrows in teams of two or three. Adults can help as needed.

Planting seeds outdoors: Seed spacing is one of the most important factors in a successful planting, so it is very important to manage children properly to achieve this goal. Once the bed is prepared, use hand trowels to create small planting furrows in your bed for seeds. Kids can be lined up next to the furrow shoulder and given a few seeds to plant or can be lined up and given seeds one by one. Show them the proper spacing with your fingers and have them show you the same distance with theirs. Larger seeds can be placed one by one at the proper spacin; smaller seeds such as kale or lettuce can be sprinkled. Be sure to demonstrate whichever technique you will be using.

Planting starts: Once weather conditions are right for planting, starts can be planted in the garden. Provide at least one plant per child and lay them out in the bed for proper planting. Or distribute starts to kids, have them plant one by one, and show them exactly where each start should be planted. With a hand trowel, have kids dig a hole that is slightly larger than the root ball of the starts. Remind them to place the soil from the hole directly next to it rather than throwing it out of the bed (which seems to be their natural impulse). Once the hole is dug, have them place the plant in the hole, backfill with soil, then pat the soil down firmly with their hand or trowel. Kids can water in their plants with watering cans once the entire planting has been completed.

Weeding: Kids can remove weeds by hand or with hand trowels. Make sure they can identify which plants are weeds and which are crops.

Watering: Watering is a favorite activity for children. Provide watering cans, cups, or water bottles for kids a few at a time and have them water specific sections of the garden thoroughly. An adult may have to water at the end of the activity to ensure that each plant has been watered enough.

Harvesting: The most exciting activity in the garden is harvesting. Make sure to harness the children's natural enthusiasm by giving detailed instructions. Make sure they don't pull out plants or harvest unripe fruit. Leaves can be harvested by pinching them off or with kids' scissors. Fruits can be twisted off or plucked gently from plants, and roots can be pulled by gripping the very bottom of the stem.

Tool safety: Prior to any tool usage by children, it is important to go over safety issues. Instruct children that tools are not toys and should be respected as such. Tell kids that tools never need to be lifted above the waist to ensure that they will never make contact with the upper body accidentally. Make sure kids have enough space around them to work without accidentally hitting other kids with the tools.

Watering schedule: Most crops require ½ in. of water weekly in order to thrive. A daily watering schedule should be created as soon as seeds or starts are planted. Watering is best performed in the morning or evening, so that the summer heat doesn't evaporate the water before it reaches the roots.

Summer engagement: Summertime presents special challenges for school gardens, as well as opportunities to engage with the community. If you are a school garden champion, check with your administrator to see if your school building - and especially water - will be accessible during the summer. If not, perhaps it makes the most sense to plant only spring crops then put the garden to bed over the summer. If your garden is still accessible, there are many ways to make sure that it receives the care it needs to thrive over the summer.

Summer youth programming can easily incorporate gardening as a daily activity if summer camps or summer school will be happening at your site. Gardening programs such as Seed to Supper (see curricula above) can be organized at your site; weekly classes for six to eight weeks can include some garden management tasks as part of the program's educational opportunities. An Adopt-a-Garden program asks families to take care of the garden for one week during the summer in exchange for any produce that can be harvested during that time. Volunteer groups and summer youth groups can also be enlisted to caretake school gardens in the summer. These are important considerations to be discussed with your garden committee and the earlier a plan is in place, the more manageable the garden will be.

Outreach

Reaching out to your community will increase support for your garden and spread the workload and responsibility of garden management. Many gardens are intended to support low-income community members by addressing food insecurity. It is important during the outreach phase to consider the types of limitations these potential garden beneficiaries might face in their daily lives and craft your outreach plan accordingly. Advertise on social media but, don't forget to put up posters at laundromats, social services offices, food pantries, and public libraries. In many communities it will also be necessary to print posters in other languages, to reach Spanish speakers and other immigrant or refugee populations.

Events at your garden site are a great way to reach out to neighbors. These events should feature food and beverages, kid-friendly activities, and other enticing features that will bring people in to hear about

Little Free Farm stand at Geneva PEEPS

your project. Community build events are a great way to foster camaraderie through shared work and a shared sense of purpose. You will also be able to complete large tasks in a short period of time by enlisting the community in your effort.

Good planning, a step-wise garden development process, a well-thought-out management plan, and community buy-in are the key elements of a successful garden project. A great plan will be easy to sell to decision-makers and will encourage participation at every step of the process. It will also make long-term management more streamlined and create less burn out over time. Now it's time to get going, put pen to paper, hammer to nail, and build gardens everywhere!

High Tunnel at Newfield School Garden

Case Studies

The following case studies include brief descriptions of school and community gardens supported by FLESNY. These case studies can serve as examples of the wide variety of application of the planning and programming guidance offered in this toolkit. You will notice different garden types, purposes, and operations, along with a description of successes and challenges encountered at each site. From 2017-2019, FLESNY partnered with researchers from Cornell University Division of Nutritional Sciences to conduct process and outcome evaluations of the FLESNY garden program. Results from these evaluations are included in the case studies where relevant.

Newfield Central Schools (Newfield, NY)

Contact: Andrew Battles ABattles@*newfieldschools.org*

Newfield Schools began an intensive gardening effort in Spring 2014 after a two-year community conversation about food access. Stakeholders felt that a teaching garden would help raise awareness about and address local hunger and food insecurity. They believed the garden was a meaningful, sustainable solution and that harvest could supplement the local food pantry supply, motivating area residents to grow their own food and rely less on emergency foods.

The first garden was started in the high school courtyard, followed in 2015 by a larger garden constructed in an old swimming pool on campus beyond repair. A school Garden Committee helped organize a community build day on Earth Day 2015, at which about 100 community members, including several school sports teams, constructed new raised beds and prepared the swimming pool to become a garden. Based on this early success, the school hosts garden workday events each year. After additional success with community fundraising efforts to complement district funds, tech students constructed a high tunnel in the pool garden in 2017, which allows for increased production of tropical summer crops like tomatoes and peppers, as well as extending growing season for cool season crops.

Garden programming has been spearheaded by high school teacher Andrew Battles. He and his high school environmental science classes provided the

Garden Summary: Newfield Central Schools

Active since: 2014

Produce uses: Educational programming, school cafeteria, Newfield Kitchen Cupboard food pantry

Partners and support: Finger Lakes Eat Smart New York, Newfield Garden Club, Newfield Garden Committee, Newfield Educational Fund

Challenges: Limited staff and class time, building teacher and student buy-in and ownership, declining motivation after initial success, limited garden

Successes: Increased garden knowledge for staff and students, establishing student buy-in and the student Garden Club for students and integrating them into the school Garden Committee, linking gardening with school wellness approaches, establishing infrastructure, positive student outcomes (vegetable intake, academic performance, sense of community), funding from the district education fund and community fundraisers, raising awareness of hunger and food

Advice for other gardens: Ask for help, plan ahead of time, and, while the garden a lot of work, it's rewarding and worth the work

bulk of garden labor from 2015-2017. In 2017, he formed a Garden Club to capture excitement of youth interested in gardening, establishing infrastructure and buy-in. The Garden Club has worked after school on maintaining the garden and planning special events. Club members attend larger Garden Committee meetings that include other stakeholders such as administration, teachers, the food service manager and cafeteria staff, and parent champions.

Additional programming has included garden and nutrition education with the adjacent elementary school's pre-kindergarten and second grade classes. Even at young ages, youth understand the importance of gardening for themselves, the environment, and their communities. Second graders reported they liked gardening and wanted to continue gardening both at school and at home. They also liked seeing the garden educators, being outside, harvesting and eating the produce, Many youth told their caregivers about their gardening experiences, and requested that their families start or expand home gardens.

Garden maintenance is further supported through Workforce New York funding, which Andrew has used to hire summer staff each year since 2015. Approximately 3-4 high school students (9^{th}-12^{th} grade) work in the garden during summer break. Andrew believes these employees are crucial to summer garden maintenance, but also that youth benefit personally, not only with paychecks and a résumé boost, but also with work experience, valuable garden skills, and community connections. Summer student employees echoed this perspective and believed their garden jobs were rewarding in many ways: their fruit and vegetable intake improved, their physical activity increased, and, in addition to providing a paid job close to their homes, they liked working in the garden because it got them outside and provided them new skills – both garden skills and management skills. For example, they felt that, because they worked in the garden, they were better leaders and better at setting goals, working with a team, and listening to others. They also believed their time in the garden made them care more about the environment and feel more connected to their community; they felt like they were making a difference.

The lack of general gardening know-how was an initial barrier to success, but teacher and student confidence has grown based on the now 5 years of experience. As with any school and the overwhelming demands placed on students and teachers, both limited student and staff time for garden maintenance is the biggest challenge. The question lingers, "How much class time can we afford to spend?" The Garden Club continues to be very motivated and involved, and the Garden Committee is now much more engaged with the garden. Different school groups are using the garden independently, and students are taking leadership and expressing ownership of the site.

The school has maintained a relationship with the local food pantry, Newfield Kitchen Cupboard, with annual donations over 500 pounds of food. Additional garden produce is used in educational programming and, following coordination with the food service manager, is now also delivered to the cafeteria.

GardenSummary: Hornell YMCA

Active since: 2017

Produce uses: YMCA educational programming, Turning Point (Catholic Charities) food pantry; Christ Church Episcopal food pantry; Salvation Army food pantry; Sunday Meals Program

Partners and support: Hornell YMCA, United Presbyterian Church, Turning Point, Sunday Meals Program, Finger Lakes Eat Smart New York, diverse individual and organizational contributions

Challenges: Volunteer coordination, coordinating produce distribution, determining adequate budget

Successes: Accomplishing garden goals, streamlining decision-making processes, productive crops and good yield that feeds community members in need, strengthening ties among community organizations, providing service opportunities for community members, exposing youth and adults to gardening and building gardening skills

Advice for other gardens: A lot can be accomplished when people work together, engage partners and volunteers with different and complementary skills sets, prioritize community ownership, understand your goals and plan details for garden maintenance and distribution early

Andrew and his team continue to explore new possibilities for the garden, including establishing the garden as an outdoor classroom, fostering involvement from Newfield School staff and the larger community, creating a free farm stand, and much more.
See more about the Newfield School gardens at the links below!

http://www.newfieldschools.org/districtpage.cfm?pageid=790

https://www.ithaca.com/news/newfield/school-garden-grows-in-former-pool/article_0c3b1408-0d70-11e6-8867-d3e14caf8da0.html,

http://tompkinsweekly.com/stories/growing-community-newfield-school-garden-project-benefits-more-than-students,1327

Hornell Area Family YMCA (Hornell, NY)

Contact: Katherine Griffis kgriffis@presbyhornell.org

In Spring 2016, FLESNY served as catalyst to start discussions between United Presbyterian Church and the Hornell YMCA about shared interests in establishing a community garden with FLESNY support. The new team established a garden steering committee, which developed a mission statement and outlined garden partner responsibilities. The mission of this garden is to create and maintain a space that improves the nutritional intake and helps reduce food insecurity of Hornell-area residents, while also providing recreation and horticultural activities. With community partners, the site reached all of these goals in their first year.

The steering committee settled on a site, and began plans to fence-in a multi-purpose yard belonging to and adjacent to the YMCA. With FLESNY support, in Spring 2017 volunteers constructed 9 ground-level raised beds and 1 chest-level, wheelchair accessible raised bed and prepared them for planting. The local Lion's Club donated funds for a shed that was installed late spring. Through an agreement with Walmart, a pavilion was donated, providing covered space in which garden education occurs.

After a successful first year, in 2018 garden partners installed four additional raised beds and a blueberry bed. They also added a window and a water tank to the shed, contributed to the YMCA's Summer Youth Program with FLESNY support, and did further research on requested crops for 2018 and 2019 growing seasons, all while maintaining an attractive recreational space.

In 2018 interviews about the garden with the YMCA Summer Youth Program, youth shared that they engaged in a variety of garden tasks from planting to harvesting, cooking, and tasting garden produce. They liked working in the garden and thought it was fun being outside, getting their hands

Flyer for Hornell YMCA Community Garden

dirty, learning new things, trying new vegetables, and interacting with FLESNY educators. They understood the importance of gardening for their own knowledge and health, and cited nutrition and garden knowledge gained during the program. They wanted to continue gardening.

Produce from the garden is not only used in YMCA youth programming, it is also donated to Turning Point (Catholic Charities) food pantry, Christ Church Episcopal food pantry, Salvation Army food pantry, and the Sunday Meals Program for use in meals served. In 2017, the garden produced 373 pounds of food for these organizations.

Garden site manager Katherine Griffis attributes some of the garden's success to the steering committee's ability to advertise the garden in church

newsletters and YMCA materials. Time spent forming relationships with the city government, Hornell Partners for Growth in the Chamber of Commerce, and the Lion's Club also helped, as these organizations supported the site through advertisement, monetary, or in-kind donations.

The garden is an ambitious project because it includes multiple goals and multiple destinations for the food grown. Coordinating volunteers and handling distribution are challenges being addressed specifically in 2019. Foul weather was a big factor in 2018; a snowfall cancelled the April workday when the four new beds were to be assembled, and the project was put on hold until August. Katherine Griffis notes that it is important to have backup plans in place when these things happen and a stable and deep pool of volunteers to ensure that planting happens in a timely fashion.

In their first year, the garden hosted over 50 volunteers from multiple organizations including area churches, local banks, and colleges and universities. One major goal in 2019 season is to develop a core group of volunteers so certain groups can be counted on for workdays either at set points throughout the year or for consistent help in between workdays. The garden team has started a volunteer log with a list of priority tasks for the week in the hope that this will help with communication and getting work done.

While helpful for guiding vision and planning, the steering committee proved too large and diffuse for day-to-day decision-making. This year, the garden team has clarified lines of authority so that on-the ground decisions can occur quickly. Katherine believes being based on the YMCA property, with YMCA administrative and grounds keeping support, is a key ingredient in long-term sustainability.

The garden has operated without a set budget, subsisting on donations by steering committee members and local individual and organizational donors. The steering committee will be submitting a grant request in August 2019 for additional funds. Operating on a shoestring budget has helped organizers build relationships with local businesses, but it has also made it difficult to define an adequate self-supporting budget.

In addition to volunteer organization, distribution plans, and funding, garden leadership continues to work on community outreach, visioning continued progress for the physical space (fruit trees, art and murals, etc.), and focusing on the practicalities of planning and maintenance for the site in order to create a self-sustaining community garden.

See more about the Hornell YMCA Garden at the links below:
https://www.eveningtribune.com/news/20170417/hornells-not-so-secret-garden
https://www.facebook.com/hornellhpg/posts/community-garden-coming-to-hornellrepresentatives-from-the-hornell-ymca-united-p/994690150660884/

Garden Summary: BJM Elementary School

Active since: 2009

Produce uses: Educational programming, school families

Partners and support: BJM 2nd and 3rd grade teachers and classes, A+ afterschool program, Ithaca City School District Farm to Table program, Seed to Supper program, Cornell Cooperative Extension of Tompkins County, New Roots Charter School, Finger Lakes Permaculture Institute, diverse individual and organizational community support

Challenges: School-wide engagement, maintaining a strong garden committee with a diverse set of stakeholders

Successes: Wraparound, complementary nutrition and garden programming, tactile experiences for students that boost confidence for academic work and create personal connections to place and space, enhancing youth motor skills, success with students challenged in the classroom, plans for year-round garden care, community program engagement

Beverly J. Martin Elementary (Ithaca, NY)

Contact: Jenna Hallis jenna.hallas@icsd.k12.ny.us

Gardening efforts began at Beverly J. Martin Elementary (BJM) around 2009 by recent college graduate and garden enthusiast Audrey Baker, with two modest raised beds constructed next to the school's playground. That same year, the Finger Lakes Permaculture Institute held a work party to sheet mulch the entire length of the lawn along the outside fence, creating a 10'x80' stretch of usable gardening space. Since that time, a few raised beds were constructed each year, and in 2017, a fence and shed were built with help from Lowes. An herb spiral

and final raised beds were constructed in 2018 completing and filling the entire garden footprint.

The garden has been used by many different groups for hands-on gardening education, including 2nd and 3rd grade classes, the Academic Plus (A+) Afterschool academic enrichment/extended day program, the Ithaca City School District Farm to Table summer and afterschool program, Cornell Cooperative Extension of Tompkins County, New Roots Charter School, Seed to Supper and Finger Lakes Permaculture Institute. The garden is most heavily used by BJM's 3rd grade classes and the Farm to Table program. These youth receive hands-on gardening experiences, and they receive lessons on garden tool safety, life cycles, seeds and plant parts, plant identification, growing techniques, soil and soil composition, composting, insects and other wildlife and more.

Proximity to the playground also enables students to visit and enjoy the garden on their own during free play times. The garden has proven to be a very effective tool for allowing students to thrive by problem-solving, take leadership, and experiencing concrete successes. There are enough different tasks that each student can find their niche. This is particularly helpful for troubled students who have difficulty adjusting to a classroom setting. The garden holds great potential in the future for more one-on-one or small group activities with these students.

The BJM garden serves as a model of an integrated, well-run school project with seamless programming and community support. The 3rd grade launches the garden in the early spring, harvests short season crops by the end of the school year, and preps the garden for summer. Farm to Table classes then have plenty of food growing when they start their three-week summer session. They are able to harvest lots of produce like garlic, beans, and basil; participate in fall planting; and lead a garden tour at the end of the summer. The Fall 2019 3rd grade class will then kick off their school year with harvesting and cooking, which builds tremendous excitement amongst the students around the garden. Each program incorporates FLESNY nutrition education to maintain strong ties between nutrition and garden education, allowing students to fully experience the produce life cycle, from planting to harvesting and cooking with their crops.

In 2019, CCE Tompkins supported the first five-week family Seed to Supper class to fill the gap between summer and fall programming. Also, Farm to Table is now a year round program with a three-week summer session and 10-week fall session, offered twice a week beginning in September.

After a decade of work, the garden is heavily used and highly productive. Youth gardeners get direct contact with nature, which is highly important for many students who have very little connection to nature outside of school. The garden and accompanying programming allow youth to easily make connections about food systems and where food comes from, learn about food gardening and nutrition, and be exposed to new foods.

Moving forward, garden stakeholders hope to pursue both tangible and infrastructural improvements in order to engage the entire school community, foster continued community buy-in, and ensure sustainability:

- Vertical alignment across the school and different garden users
- A comprehensive list of standards and activities appropriate for each school grade level
- Ideas about how to link classroom instruction with the garden
- Clear guidelines for garden use
- A detailed map of what is currently growing and what space is available can be utilized to maximize garden use
- Placing a staff person in the garden at recess so students increase garden use during free play
- A strong garden committee comprised of representatives from all stakeholder groups i to distribute workload & maintain community buy-in
- A whiteboard on the shed for communication
- A formalized, covered outdoor classroom to complete the vision of the garden and make it fully functional

Enrico Fermi School 17 (Rochester, NY)

School 17 is an active, vibrant Rochester City School District community and neighborhood school that has had a garden for the past several years. However, the garden was torn up in the process of building their new greenhouse, which opened in 2019. This greenhouse is 15 years in the making, dating back to when a neighborhood resident drafted plans that have lived on in the principal's office, signifying a dream for the future. Finally this dream has come to fruition, along with eight new raised beds for the plants to thrive after incubation. Multiple work days and meetings have been held over the past school year to give the garden a

Garden Summary: School 46	
	Active since: 2018
	Produce uses: Educational programming, school families
	Partners and support: Finger Lakes Eat Smart New York, Greater Rochester Health Foundation, individual and community in-kind donations
	Challenges: Water access, limited teacher time and motivation for garden commitment, limited summer labor, focused responsibility and labor for one garden champion
	Successes: Administrative and custodial support, individual and community organizational support, wraparound programming during the school year, successful crops and good yield for a small and young garden, diverse immediate and lasting benefits for students and families
	Advice for other gardens: The garden is wonderful tool for engaging students in fun ways that also motivate them academically, welcome garden participation at any level, plan site maintenance and programming in advance and in line with school schedules, building garden program s progressively, setting short term goals each year and leveraging successes

strong foundation. Teachers, parents, staff, neighbors, community partners, and youth have been engaged in the planning and work days to ensure the garden is serving the entire school community. First and foremost, the goal is for every student to have at least one experience in the garden per school year. There are plans for growth and sustainability, and the sky is the limit with dreaming big for what this project will become.

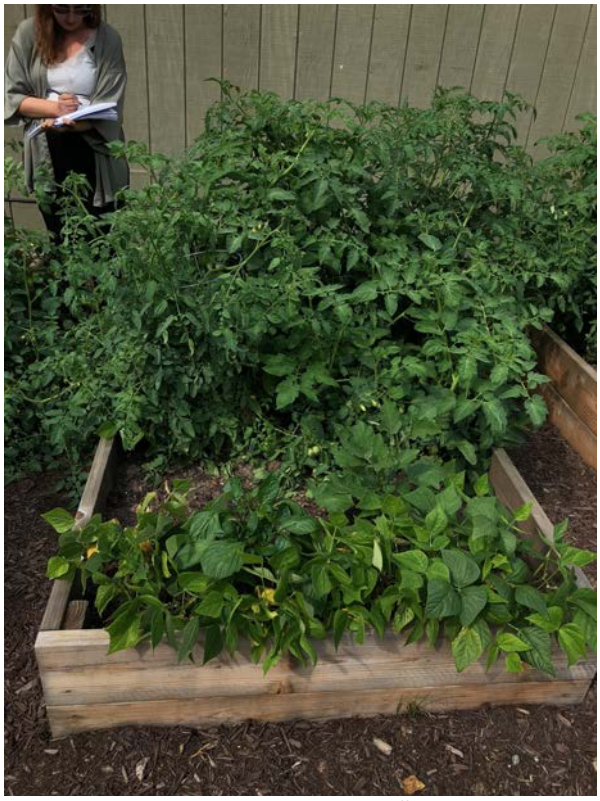
In preparation for the greenhouse opening, FLE-SNY provided coordinated garden and nutrition education in English and Spanish to 1st, 4th, and 5th grade classes in the 2018-2019 school year, priming these students with baseline knowledge and excitement for future garden engagement. [insert relevant taste and rate results]

Charles Carroll School 46 (Rochester, NY)

Contact: Kristy Storrin Kristina.Storrin@rcsdk12.org

The School 46 garden started with one 6th grade teacher's idea. Kristy Storrin knew nothing about gardening, and was initially interested in improving the school's flower garden with a few student volunteers. After seeing the interest sparked in those students and understanding broader benefits a food garden, in 2017 began plans for garden beds in the area outside the school's portable classroom. With water access more than 100' away on the school building, Kristy did not let that stop the momentum. Community partner Greater Rochester Health Foundation (GRHF) connected Kristy with Josh Dolan at Cornell Cooperative Extension of Tompkins County to provide support. Together, they broke ground in Spring 2018, hosting a workday with her students to build, fill, and plant in four raised beds and a trellis. Following the success of the garden's first summer, Kristy received additional funding from GRHF and donations from a local hardware store, allowing her to increase garden support and student engagement. Since then, pre-k, kindergarteners, 4th, 5th, and 6th graders have become involved with the garden. Students are able to start seeds and house crops in a 5th grade teacher's classroom greenhouse, plant seeds and starts outside in the spring, and return to see fully grown crops ready for harvest in the fall.

Cooperative Extension and Finger Lakes Eat Smart New York has supported the site with garden and nutrition education. Kristy notes that having experts come in is exciting for youth and provides additional



Rainwater system at Hornell YMCA

person-power needed to support youth garden time, especially for single teacher classrooms. For example, she has coordinate outdoor garden time with indoor education, splitting classes to make manageable group sizes for garden work.

Kristy reports a diverse set of successes among youth gardeners and their families- mental health benefits, school-based conversations about food system and cultural variation in food patterns, improved student eating habits, opportunities for caregiver-child communication about food and health, and even changes in caregivers' eating habits. Student gardeners demonstrate improved cooperative and team-building skills and better problem solving, and the garden provides a camaraderie among students that often exists only for youth involved in sports or music programs. Kristy believes offering the opportunity for students to be involved in something different at school is helpful. As a special education teacher, Kristy sees her students that struggle academically flourish in the garden, having found tasks at school in which they excel. The garden has also created exciting opportunities for students to share their produce with their families and with the larger school communities. For example, pre-k students planted sunflowers, and older youth harvested the seeds. They created seed packages and distributed them at the school Holiday Bazaar. This kind of recognition is important and validating for students.

Kristy believes the gardens presence itself positively affects the community. Garden progress has piqued interest of nearby residents, groups interested in community service, and school families interested in investing in the school in a new way. The success of the garden has inspired the school to explore other outdoor activities; for example, the school has now built a Zen garden.

The Summer 2019 crops are thriving, and water access will be improved in coming months. Meanwhile Kristy continues to work toward expanding engagement to more teachers and students in the school. Looking to the future, she is considering opportunities for teacher professional development related to gardening, as well as projects like composting, integrating school subjects like math into garden activity, youth garden entrepreneurship, and hydroponics.

Rainwater system at Hornell YMCA

Andrews Terrace Apartments (Rochester)

Contact: Sandra Calas ccalas@pathstone.org

Gail Maureen, Resident Services Coordinator and a Master Gardener, started the Andrews Terrace garden in 2009 on top of the underground parking garage, with one 36' x 36' community garden and no individual plots. The garden expanded by taking over an unused bocce court in 2010. A year later the second bocce court was taken over for use by gardeners and individual plots were given to resident volunteers. The total garden area is now 3,662 square feet and two wheelchair accessible raised beds. The site has received support of property management, leaders Ed Raskin and Sandra Callas, as well as the City of Rochester, Fruition Seeds, and volunteers from United Way and Monroe Community College.

While employees and three residents were primary garden users at the start, now 13 residents participate directly. Increased participation, in part, reflects the success of garden leadership and regular gardeners in leveraging relationships with residents to advertise the garden and encourage engagement. Positive changes include improvement in the health of residents, interaction and community work has increased, and greater nutrition (thanks to CCE) and garden knowledge. There is a lot of pride for the garden and residents are very engaged.

Produce benefits the entire residential community, as gardeners keep some of the produce for themselves and share the rest at the Wednesday free food distribution event. The garden also fosters a sense of community, has connected gardeners and beautified the outdoor space. Annually more than 400lb of harvested vegetables are collected and more than 1000 hours are contributed during the harvest period between volunteers (such as United Way) and residents.

Glossary

Conventional gardening - Gardening style that typically involves the use of annual tilling and chemical based agricultural amendments and sprays to fertilize the soil and control pests and weeds.

Organic Gardening - Gardening without the use of chemical fertilizers of sprays utilizing compost, organic materials and minerals to enrich the soil, tillage to control weeds, and plant-based sprays to control pests and diseases.

Square Foot Gardening - Gardening style that divides the gardening space into squares and planting based on space needs. This allows for a very orderly garden that utilizes space to the fullest.

Permaculture - Design system that seeks to mimic natural systems, increase biodiversity and eliminate waste. Some examples of design elements typically found in permaculture systems include rainwater collection, swales, sheet mulch, hugelkultur, integration of livestock to perform specific roles in the landscape, forest gardens and more.

Biointensive Gardening - From Wikipedia "Biointensive agriculture is an organic agricultural system that focuses on achieving maximum yields from the minimum area of land, while simultaneously increasing biodiversity and sustaining the fertility of the soil."

Biodynamic Gardening - From Wikipedia "Biodynamic agriculture is a form of alternative agriculture very similar to organic farming, but it includes various esoteric concepts drawn from the ideas of Rudolf Steiner" including planting based on lunar cycles, etc.

Appendix A

FINGER LAKES
EAT SMART NEW YORK

Sustainability Planning Worksheet for School & Community Gardens

* Required

Email address *

_____

Garden Coordinator *

_____

Garden Name

_____

Garden Address *

_____

Phone *

_____

Secondary Contacts and Contact Information

_____

Garden Goals

How do you measure success?
Check all that apply.

- Pounds of produce harvested
- How harvest is utilized
- Educational value
- Number of educational events
- Recreational value
- Number of participants
- Socioeconomic and ethnic diversity of participants
- Other: _____

What are the goals for the garden?
Check all that apply.

- Increase growing area
- Increase soil quality
- Improve water access
- Improve accessibility
- Repair or add raised garden beds
- Establish garden committee that meets regularly
- Recruit new volunteers
- Recruit new participants
- Begin educational programming
- Expand educational programming
- Provide training for staff, volunteers and participants
- Raise money for the garden
- Establish or strengthen partnerships
- Undertake specific construction project
- Other:

List and expand on your top 3 goals and the steps you will take to accomplish them.

Site Characteristics and Planning

For each category in this section (water, fencing, solar access, etc.) a space is provided to input costs associated with needed items. Please enter the estimated budget needed to accomplish each improvement you select. Contact Josh at jd285@cornell.edu with any questions on budget.

Briefly describe garden site

_____

Describe water source *
Check all that apply.

- Water faucet/Municipal
- Water faucet/Well
- Rain catchment
- Water pump/pond or stream
- None
- Other:

Describe plan to address water access. Please write "N/A" if you do not plan to make changes.

_____

Budget: WATER*
Please write "N/A" if you are not pursuing water improvements at this time.

_____

Describe fencing/wildlife barrier*

Check all that apply.

- Chicken wire 4'
- Welded wire 4'
- Deer fence netting 8'
- Deer fence welded wire 8'
- Court yard
- Natural hedges or barriers
- None
- Other:

Describe plan to improve fencing. Please write "N/A" if you do not plan to make changes.

_____

Budget: FENCING*
Please write "N/A" if you are not pursuing fencing improvements at this time.

_____

Describe solar access *
Check all that apply.

- Full sun (6 or more hours of direct sun per day)
- Part shade (3-6 hours of direct sun per day)
- Full shade (Less than 3 hours of direct sun per day)

Describe steps to improve solar access. Please write "N/A" if you do not plan to make changes. _____

Budget: SOLAR ACCESS*
Please write "N/A" if you are not pursuing solar access improvements at this time.

_____

How many raised beds does the site contain? (Enter 0 if there are no raised beds.)

_____

What is the condition of the raised beds? (Please skip this question if there are no raised beds.)
Mark only one oval.

1 2 3 4 5

Poor Excellent

Budget: ADD/REPAIR RAISED BEDS*
Please write "N/A" if you are not pursuing raised bed additions or improvements at this time.

_____
Does your site currently have tool storage?

Describe quality of tool storage (Please skip this question if there is no tool storage at your site.)
Mark only one oval.

1 2 3 4 5

Poor Excellent

List any needed tools and supplies that you currently lack. Please write "N/A" if additional tools and supplies are not needed.

_____

Budget: TOOLS/TOOL STORAGE*
Please write "N/A" if you are not pursuing tool storage improvements at this time.

_____
Rate site accessibility
Mark only one oval.

1 2 3 4 5

Poor Excellent

Steps to Improve Accessibility
Check all that apply.

Widen pathways
Install hard pathways

Install ADA/wheelchair accessible raised beds
Changes are not required at this time.
Other:

Budget: ACCESSIBILITY*
Please write "N/A" if you are not pursuing accessibility improvements at this time.

_____

What crops do you plan to grow?

Check all that apply. See seed start dates in parentheses.

Beans (direct seed May-June)
Beets (direct seed April-May)
Broccoli (starts early March-April)
Brussels sprouts (starts early March-April)
Cabbage (starts early March-April)
Carrots (direct seed April-May)
Cauliflower (starts early March-April)
Corn (direct seed May-June)
Eggplant (starts late March-early April)
Kale (starts early March-April)
Lettuce (starts March-April)
Melons (starts April-May)
Onions (starts February-March)
Peas (direct seed April-May)
Peppers (starts late March-early April)
Potatoes (direct seed May-June)
Pumpkins (starts May-June)
Spinach (starts March-April)
Squash (starts April-May)
Tomatoes (starts April-May)
Other:

Budget: PLANTS AND SEEDS*
Please write "N/A" if you do not need to purchase plants or seeds at this time.

_____

Financial Sustainability

What types of funding sources support this garden?
Check all that apply.

National grants
Local grants
Local civic organizations
Local faith-based organizations
Municipal funding
Grassroots fundraising
Crowdsource fundraising

Organizational budget
Other:

List the specific organizations/funding sources that support this garden

_____

List any in-kind donations that support this garden (include source and type)

_____

Total funding available in 2018

_____

Educational and Community Resources

List community and organizational partners

_____

Describe plans to maintain or increase engagement and outreach to participants, volunteers, etc. _____

Describe training needed for staff, volunteers or plot holders
Check all that apply.

Basic gardening techniques
Garden planning
Composting
Seed starting
Seed saving
Growing small fruits
Soil improvement techniques
Permaculture
Other:_____

What barriers or challenges do staff/ volunteers face?

_____

What educational/community resources are in place?
Check all that apply.

Community partnerships
Curricula and lesson plans
Staff
Volunteer program
Extension Master Gardeners
Non-profit umbrella
Nutrition education
Other:

What curriculum is being used?
Check all that apply.

Grow it, Try it, Like It (Pre-K-1st)
The Great Garden Detective (2nd-3rd)
Dig In! (4th-5th)
Junior Master Gardener Program
Seed to Supper (adults)
Other:

How is produce utilized?
Check all that apply.

Cafeteria
Nutrition education
Fresh snacks
Special events
Donated to food pantry
Donated to school families
Used by participants
Donated to local residents
Other:

If food pantry was listed, please list the name(s) and contact(s) for each

_____

School/Youth Gardens

Please complete these additional questions if you represent a school or youth garden.

Describe school gardening program, goals, and unique attributes.

_____

List grades/classes participating

_____

What is the plan to manage garden during summer including weeding, watering & harvesting?
Check all that apply.

Summer programming
Summer youth employees
Family adopt-a-week program
Volunteer weeding and watering schedule

Cornell Cooperative Extension

SNAP Supplemental Nutrition Assistance Program
Putting Healthy Food Within Reach

foodlink abundance shared

Finger Lakes Eat Smart NY is funded by USDA's Supplemental Nutrition Assistance Program (SNAP). USDA is an equal opportunity provider. Cornell Cooperative Extension is an employer and educator recognized for valuing AA/EEO, Protected Veterans, and Individuals with Disabilities and provides equal program and employment opportunities.

Appendix B

Funding Opportunities

What: DonorsChoose.org
Who May Apply: Public school teachers post classroom project requests and interested individuals sign on as sponsors.
Amount: Sponsor may give any amount to a project.
Deadline: Ongoing
Contact: www.donorschoose.org

What: American Community Gardening Association
Who May Apply: Individuals improving their communities through gardening
Amount: 21 Cash and gift certificate awards
Deadline: June 1st annual deadline
Contact: https://www.communitygarden.org/forum

What: Green Education Foundation
Who May Apply: Individuals improving their communities through gardening
Amount: 21 Cash and gift certificate awards
Deadline: June 1st annual deadline
Contact: http://www.greeneducationfoundation.org/for-educators-landing.html

What: Grow with us Grant
Who May Apply: School garden programs (public, private, or homeschool)
Amount: up to $18k
Deadline: Annual deadline Jan 16th
Contact: https://www.agclassroom.org/ny/grants/grow_us.cfm

What: America the Beautiful Fund
Who May Apply: Non-profit groups receive seed donations from major seed companies
Amount: Sets of 50 packets of vegetables, flowers and herbs are available for the cost of postage/handling.
Deadline: Ongoing
Contact https://philanthropynewsdigest.org/npo-spotlight/america-the-beautiful-fund

What: Lowe's Charitable and Educational Foundation
Who May Apply: Funding to 501(c) (3) tax-exempt nonprofit organizations and public agencies in communities
Where: Lowe's operates stores and distribution centers, projects considered on a case-by-case basis
Amount: $2K to $100 K
Deadline: One grant can be submitted per year with no deadline
Contact: Visit Lowe's stores for an application or visit http://www.communitydevelopmentgrants.info/GrantDetails.aspx?gid=16792

What: Youth Garden Grants Program/ National Gardening Association and Home Depot
Who May Apply: Schools, community organizations, or individuals with child-centered garden programs.
Amount: $500 to $1,000
Contact: http://gardenclub.homedepot.com/the-good-seed-grow-a-youth-garden-with-a-grant-from-home-depot/

What: Dryers Foundation
Who May Apply: Bona fide nonprofits for small grants and product donations
Amount: $1000 and donates ice cream products
Deadline: ongoing
Contact: https://grantpathfinder.weebly.com/dreyers-foundation-small-grants-and-product-donations.html

What: Sustainable Agriculture Research and Education (SARE) Sustainable Community Grants for Professional Development
Who May Apply: Extensions, nonprofits, producers
Amount: $15,000 or less
Deadline: October 29
Contact: https://www.northeastsare.org/Grants/Get-a-Grant/Professional-Development-Grant

What: Ithaca Rotary Club
Who May Apply: Community grants program to promote the quality of life in Tompkins County, small non-profit organizations
Amount: $200 - $1,000
Deadline: May 1, 2020
Contact: https://portal.clubrunner.ca/2079

What: Kids Growing Food II: Continuation Grant/ National Gardening Youth Association Grant
Who May Apply: any nonprofit or youth program
Amount: $500
Deadline: November, more details will be released in the fall
Contact: https://kidsgardening.org/grants-and-programs/

What: Community Food Projects (USDA) (CFPCGP)
Who May Apply: Projects that link steps of the food system, entrepreneurship
Amount: Up to $10K - $400K
Deadline: June 3rd
Contact: https://nifa.usda.gov/funding-opportunity/community-food-projects-cfp-competitive-grants-program

What: Get Ingrained
Who May Apply: People or organizations committing to bettering the health in their neighborhoods, towns, and cities
Amount: $15,000
Deadline: October 4th
Contact: http://phennd.org/update/get-ingrained-grants-program/

What: Echoing Green Social entrepreneurs
Who May Apply: For social entrepreneurship, try to build a diverse and inclusive social impact space
Amount: $60,000 for indiviuals or $90,000 for partnerships
Deadline: October 30th
Contact: www.echoinggreen.org

What: Fiskars' Project Orange Thumb Community Garden Grants
Who May Apply: community garden groups in the U.S.
Amount: $1,500 in Fiskars Garden Tools (retail value), and up to $800 in gardening-related materials such as plants, seeds, mulch, etc.
Deadline: ongoing
Contact: https://www2.fiskars.com/Community/Project-Orange-Thumb

What: National Science Teachers Association
Who May Apply: Science Teachers
Amount: 50 large grants and a minimum of 20 mini-grants, totaling $550,000
Deadline: January
Contact: www.nsta.org/pd/tapestry

What: Arthur M. Blank Foundation
Who May Apply: nonprofits, mainly located in Georgia or Atlanta
Amount: to Promote Increased Access to Healthy Foods in Schools and Neighborhoods, but often limited to projects in Georgia and Montana
Deadline: ongiong
Contact: https://blankfoundation.org/apply/

What: Community Garden Organization Capacity Building Grant Program
Who May Apply: A 501 (c) (3) not-for-profit corporation or must be sponsored by a 501 (c) (3) not-for-profit corporation (see other eligibility requirements in the RFA) or municipality to act as a fiscal agent to administer the grant funding.
Amount: $5000
Deadline:
Contact: https://www.agriculture.ny.gov/rfps/CommunityGardensCBGP08-09/CGCB_Q_and_A.pdf

What: United way
Who May Apply: Access to healthier food choices for families and children
Amount: various grants
Deadline: January 2020
Contact: https://unitedwaynca.org/for-partner-nonprofits/community-impact-grants/

What: The Legacy Foundation
Who May Apply: Tompkins County projects in the areas of health, education, recreation, human and social services, aging, and the arts
Amount: varies
Deadline April 15th, September 15th
Contact: www.tclegacy.org/apply.htm

What: NY State parks grants programs
Who May Apply: Various funding opportunities for land acquisition, etc. toward preservation, recreation etc.
Amount: varies
Deadline: December
Contact: http://www.nysparks.com/grants/state-funded-programs.aspx

What: NY State DEC
Who May Apply: various green projects qualify, not for profit organizations
Amount: depends on the grant
Deadline: January 1st
Contact: https://www.dec.ny.gov/pubs/grants.html

Whole Kids Foundation
www.wholekidsfoundation.org.

Kitchen Gardeners International
http://kgi.org.

Annenberg Foundation
www.annenbergfoundation.org.

Wild Ones
www.wildones.org.

National Park and Recreation Association

www.nrpa.org/garden.

Outdoor Nation
www.cybergrants.com/pls/cybergrants/quiz.display_question?x_gm_id=4494&x_quiz_id=4958&x_order_by=1.

Garden ABC's
www.gardenabcs.com/Grants.html.

Urban farm funds
www.borrowers.kivazip.org.

Betsy and Jesse Fink Foundation
www.betsyandjessefinkfoundation.org.

David Rockefeller Fund
http://drfund.org.

Levitt Foundation
http://fdnweb.org/levitt.

Lucius and Eva Eastman Fund
www.communityfoodfunders.org/foodfunder/lucius-and-eva-eastman-fund.

Merck Family Fund
http://merckff.org.

Appendix C

Budget Worksheet

Estimated Funding Needed

Water ..... $

Fencing ..... $

Soil ..... $

Raised beds ..... $

Tools ..... $

Storage ..... $

Accessibility ..... $

Plants and seeds ..... $

Other: ..... $

Total: **$**

Funding notes and recommendations:

Appendix D: Garden Harvest Log

<u>**Garden Harvest Log**</u>

Date	Type of Produce	Pounds of Produce Harvested	Where produce was used/ donated

Total lbs of Produce   0

Appendix E: Seeding and Transplanting Chart

FIRST SEEDING AND TRANSPLANTING DATES FOR VEGETABLES IN NEW YORK

As early as garden may be worked in Spring or about April 15.	After the date of the last average frost in Ithaca area - - May 14.	After the soil has become warm in Spring June 1.
Beets	Beans	Basil
Broccoli (x)	Eggplant*	Cucumber
Brussels Sprouts (x)	Pepper*	Muskmelon*
Cabbage(x)	Popcorn	Okra*
Carrots	Potatoes	Pumpkins*
Cauliflower (x)	Sweet Corn	Squashes, Summer
Celery (x)	Tomatoes*	Squashes, Winter*
Endive		Watermelon*
Kale		
Kohlrabi		
Leeks		
Lettuce		
Mustard		
Onions w		
Parsley		
Peas		
Radish		
Swiss Chard		
Spinach		
Turnips		
Rutabagas		

* Indicates variety is transplanted.

(x) Indicates may be transplanted or seeded. If transplanted probably, should be transplanted later than date given.

w Indicates may be transplants, sets or seed.

LAST SEEDING AND TRANSPLANTING DATES FOR VEGETABLES IN NEW YORK

Average First Fall Frost October 1

Questions often arise on how late a vegetable can be planted in the garden in New York State and still reach maturity or usable size before frost or cold weather stops growth. The last dates listed below for each crop are based on observations at Ithaca, NY. Most years the crop will reach the harvestable stage if planted by the date indicated, but yields of crops requiring multiple harvesting (tomatoes, peppers, cucumbers, etc.) likely will be rather light unless the fall weather is warmer than normal, and first frosts are unusually late. In parts of New York where the fall weather averages milder than in Ithaca, planting a week to ten days later might be possible; for cooler areas move the dates 7-10 days earlier.

June 10	June 30	July 15	July 31	August 10	September 10
Beans, lima Edible cowpeas Herbs, most Muskmelons* Okra* Popcorn Edible Soybeans Tomatoes (late) * Watermelon*	Beans, pole snap Brussels sprouts Cabbage (late) Celeriac Celery* Eggplant* Leeks Peppers Sweet corn (medium) Tomatoes (early)	Beans, snap Cabbage (medium)* Carrots Cauliflower (late) * Chinese cabbage Cucumbers Lettuce, head Lettuce, romaine Onions, green Parsley Parsnip Rutabagas Squash, summer Sweet corn (early)	Beets Broccoli (late) * Cabbage (early)* Collards Endive Kale Kohlrabi Lettuce, Bibb Mustard Peas Radishes, Chinese Swiss chard	Broccoli (early)* Cauliflower (early) * Lettuce, leaf Spinach Turnip	Radish

* Indicates the crop normally is transplanted and the date is for setting transplants in the garden.

Notes:
1. Success at these last dates will vary for the district and the year.
2. Onions should be seeded by April 30 or transplanted by May 15.
3. Many crops normally transplanted can be seeded directly in the garden. These include broccoli, cabbage, cauliflower, muskmelons and tomatoes. The last safe seeding is 2-3 weeks earlier than the transplant .

The early, medium, late in parenthesis refer to the variety. Early maturing varieties can be seeded later than slower growing late varieties.