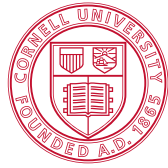


Getting Started with Garden-Based Learning

An Introductory Guide for Program Leaders/Educators

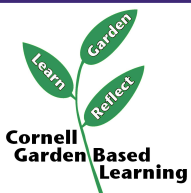


Cornell University
Cooperative Extension and
Department of Horticulture



Table of Contents

Benefits of Garden-Based Learning.....	2
Gardening Basics	3
Meeting Needs	6
Activities.....	10
Partnerships.....	11
Volunteer Engagement	13
Program Framework.....	16
Evaluation	20
Fundraising	23



This material is based upon work supported by USDA and the United States Department of Defense under Award No. 2009-48667-05833.

Benefits of Garden-Based Learning

Enthusiasts state that a garden is a creative, inter-generational environment with many opportunities. How might your program participants benefit by engaging in garden related activities? How might your program use garden-based learning as a tool for meeting its outcomes?

Gardening has a long history through which gardens have served many purposes from providing food and beauty to building personal and community well-being. There is much documented research on the benefits of gardening, including:



- Gardens provide increased food supplies which require minimal transporting and gardeners have greater consumption of fresh vegetables and lower consumption of sweet foods and drinks compared with non-gardeners (Carlijn 2006, Armstrong 2000 and Blair et al, 1991).
- Gardens can be an important avenue to community development, and can assist families in understanding the link between local food and their well-being (Wright 2008, Olsen 1996).
- Gardening is linked to enhanced physical, emotional, social, and spiritual wellbeing, and can be a coping strategy for living with stressful life experiences (Catanzaro 2004, Kidd 2004, Unruh 2004 and Kaplan 1995).
- Community gardening has the potential to specifically help military family members in a variety of ways including access to fresh, healthy, pesticide-free food and the outdoors/nature as well as a mentorship platform and as stress treatment (Fairleigh 2004).
- Among children and youth, gardening benefits range from increased environmental awareness to enhanced science achievement and community connectedness, and improved willingness to try more fruits and vegetables (Graham and Zidenberg-Cherr, 2005, Holben et al, 2004, Waliczek and Zajicek, 1999, Robinson and Zajicek, 2005).

For some individuals and families, gardening can mean the difference between thriving and poor productivity and health.



Find the research articles referenced above and more in the **Program Tools** section at gardening.cornell.edu

You will also find in the **GBL Benefits** section these PowerPoint presentations to download and show your audiences including potential supporters, collaborators and participants:

Why Garden in Schools?

Why Garden with Military Family Members?

Gardening Basics

Providing children, youth and families with the opportunity to greatly improve their basic gardening skills and increase confidence in their ability to garden will lead to successful gardening experiences. This gardening success will maximize a wide range of tangible and unexpected benefits for these gardeners, regardless of age, abilities, and gender. But we cannot emphasize enough our mantra ...

Gardening is the easy part!

Keep it simple:

- No need to stress over having to “do it all” and be the “master gardener.”
- Identify those who are knowledgeable and form partnerships.
- Value being reliant on each other.

Understand that failure will happen, sometimes more often than success but each presents an opportunity for developing the best gardening skill...keen observation. Ground your gardening in the following basics and expand your gardening potential with thoughtful, reflective attention to your garden ecosystems and the practices of others.



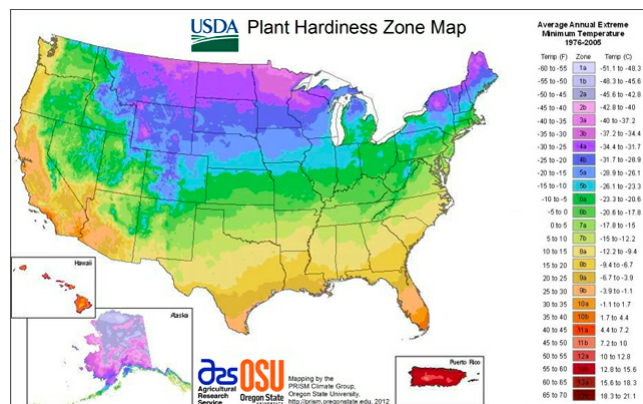
Garden basics:

- **Sun** (full sun = 6 to 8 hours a day).
- **Soil health** is central to plant health and productivity. Promote the capacity of garden soil by first identifying characteristics of your soil and those most vital to the crops you wish to grow. Then add appropriate materials to the garden soil as needed and use cultural practices that maintain soil health.
- **Right plant, right place.** What do the crops you want to grow need to grow well? What hardiness zone? What soil pH? Find growing guidelines for them. Or what plants grow where you wish to garden? Look for recommended plant lists from Cooperative Extension and knowledgeable local gardeners.
- **Water** - accessible and safe for desired use.

Find out more in the **How To** section of gardening.cornell.edu.

Consider sharing with your participants the fact sheet: **So You Want to Start a Garden: Taking the First Step**

See next 2 pages and available at gardening.cornell.edu/military





Cornell University
Cooperative Extension and
Department of Horticulture

So You Want to Start a Garden: Taking the First Step

You can probably just about taste that *really* fresh salad, imagine the bite out of your first homegrown tomato, or visualize the wall of colorful flowers. Getting started isn't difficult, especially if you begin small, and consider a few things to begin with.

As you can tell from the volumes of material out there on gardening, and from the depth of information at gardening.cornell.edu, you can get overwhelmed pretty quickly. Below are some of the bare essentials of gardening. Start your plan here to maximize planting success.



What would you like a garden for?

Oftentimes, people get excited about the idea of gardening, and before you know it, you can smell the fresh earth generated from digging. First, though, think about what you want.

- Fresh produce: your main goal is to have good food to eat.
- Good looks: you want to spruce things up a bit.
- A place to hang out outdoors: you'd like to have a space outside that feels like an outdoor living room.
- Help the earth: maybe you'd like to feed the birds, create some green space, or teach a child to plant a tree.
- Connect to someone you care about: gardening is something you can do with friends, family or community members.

These are not mutually exclusive, and your dream may be some or all of the above. If you're new to gardening, you might find greatest success tackling one approach at a time instead of jumping into making your home an oasis of green. For example, an easy place to start would be a small vegetable garden with a few easy crops such as leafy greens, beans, squash and cherry tomatoes or an annual flowerbed with colorful zinnias or marigolds.

Where are you thinking of locating the garden?

Since plants are living things, and need certain factors to grow, learn a little bit about your potential garden location. You will need to either pick plants that will do well with your available site (and containers, if that is the case) or if even possible make some changes to the site to create a favorable place for the plants you want to grow.





Cornell University
Cooperative Extension and
Department of Horticulture



Ideal characteristics of a garden site include:

- Full sun; 6 to 8 hours of direct sun daily.
- Well-drained soil. No standing water after heavy rains.
- Flat landscape or a terrace across a slope.
- Good air circulation but protection from high winds.
- Distance from trees to minimize competition for light as well as water and nutrients.
- No low-lying frost pockets.
- Nearby water source.

We know you're eager to plant, but first you'll want to:

Locate a site, following the suggestions above. Whatever you think you can handle, size-wise, you may want to go with half that the first year. Start small, take good care of your garden, and next year, you'll be ready for a larger plot.

Prepare your soil in the fall in anticipation of planting next spring. If you're still learning about soils, and are unsure about what you have to work with, contact your local Cooperative Extension office for information about testing soil pH, organic matter and nutrient levels.

To learn more about crops check out the "how-to" link at gardening.cornell.edu. Go to the Growing Guides section under Garden.

Think about what you and your family really like to eat before planning your food garden. Vegetables will go to waste if what you grow doesn't match what you eat.

Did we already mention start small? There is nothing more discouraging than planting more than you can take care of. Each year, plant more of what you didn't have enough of, and less of what was in surplus.

Make a map of your garden plan to help you visualize what it will look like and to make the best use of space. Avoid planting tall crops where they'll shade out shorter ones.

If you're thinking long term, you may be thinking about perennial crops, such as chives. For the beginner, it may be wise to wait a year or two before making this commitment. When you're ready, group perennial crops -- ones that come back every year such as rhubarb and chives -- together along one side of the garden so they will be out of the way.

The fun part comes with choosing specific varieties. If you're ordering seeds by mail, order early to guarantee availability. During the winter get acquainted with the possibilities by talking with people, looking at catalogs and for vegetables and some herbs check out Cornell's Vegetable Varieties for Gardeners site (vegvariety.cce.cornell.edu). Here you will find thousands of varieties reviewed by other gardeners and seed sources.



Meeting Needs

We grow much more than plants in our gardens by incorporating principals of children and youth development, adult education and community building appropriately into all aspects of a garden-based program including planning, designing, planting, maintaining, harvesting and recruiting further support.

Children and Youth Development

When targeting children and youth audiences consider the following four themes of positive youth development, which were developed by Dr. Cathann Kress.

Mastery: Learning by doing “I can.” It isn’t difficult to create a long list of all the ways in which a child or youth can gain skills by interacting with the plant world. Hands-on activity, experiential learning, group investigation, and discovery are the very stuff of gardening.

Belonging: Cultivate relationships “I belong.” In this busy culture of scheduled children, youth and families, it’s easy to forget that more than ever, hanging out with each other has tremendous value. Older adults often have tremendous knowledge about gardening; talking with them can be a way to promote relationships outside the usual scope of young people’s affiliations.

Generosity: Gestures of thoughtfulness & shared responsibility “I can make a difference.” There is often a lot of produce or flowers to be shared when you’re in the thick of a terrific gardening experience, and many people in our communities can benefit from shared food and beauty. But generosity can include much more. A skilled garden-based learning educator reinforces gestures of thoughtfulness, and asks young people to take responsibility for others. Critical reflection, as a part of a service-learning experience, can be an important pursuit that leads to compassion, a broader scope, and life-long interest in the community.

Power: Authentic youth engagement & decision-making “I matter.” Commonly the people who are the most enthusiastic about gardens and gardening are adults. The challenging thing can be sharing power with young people, through self-governance, with respect to garden planning, design, implementation and maintenance. However, there are myriad decisions to make around gardening, and before making any, consider whether children and youth could or should make the decision. It might mean revising our notions of committees, meeting structures, timing, and the whole approach to how the project is organized but their ideas are often more creative and less burdened with “shoulds” and “the way things are.” There are many obstacles in gardening, from deer and other pests, to weather and site concerns; we shouldn’t deprive children and youth of the thrill of overcoming these barriers. Review resources found at www.gardening.cornell in the **Program Tools Planning & Organizing** section to explore additional ways to better engage children and youth in decision-making aspects of garden projects.

Including these four themes in any garden-based learning effort requires weighing equally the importance of raising the crops and subject matter expertise, and growing competent, committed, reflective, and caring people. To work more opportunities for mastery, belonging, generosity, and power into your program, print and use the tool on the next page: **Planning for Positive Youth Development Through Garden-Based Learning**. First think of an activity: planting pumpkins, planning a new garden, or hosting a harvest festival. Then how might you expand it? Use the planning sheet to dig deeper and get the most out of meeting the needs of children and youth in the process. Also at www.gardening.cornell in section **Program Tools Planning & Organizing**.

Planning for Positive Youth Development through Garden-Based Learning: Generosity, Belonging, Power, and Mastery

Use this tool to dig deeper into your program activities and support the growth of collaborative, committed, reflective, and caring young people. Consider an activity: planting pumpkins, planning a new garden, or hosting a harvest festival. How might you build in opportunities for generosity, belonging, power, and mastery?

GENEROSITY ::: “I can make a difference.”

Strategies:

- Show how garden skills can be used in positive ways.
- Respect and encourage friendships.
- Encourage compassion for others, and concern for the earth.
- Reinforce gestures of caring, and ask young people to take responsibility for helping others.
- Share the harvest—consider all the ways to extend what you are learning and growing to improve the lives of others.
- Establish a mentoring component to link older students with younger students.



BELONGING ::: “I belong here.”

Strategies:

- Encourage students work together to complete tasks.
- Spend time gardening with students, and take your time!
- Think of ways to involve families and community.
- Work in small groups to encourage close relationships.
- Promote collaborative and cooperative learning.
- Show respect for the value of diverse cultures.
 - Provide multiple opportunities for youth to develop relationships with adults.
 - Be sure to have time for fun!



POWER ::: “I matter.”

Strategies:

- Ask yourself: “Is there something I am doing that a young person could be learning by doing?”
- Include children in discussions and encourage their input.
- Ask children to do something instead of telling them to do it.
- Give children responsibility with a minimum of reminders.
- Commend children who recognize the limits of their independence and seek counsel.
- Allow children the thrill of overcoming an obstacle.
- Maintain a close link between independence and responsibility. Share decision-making with young people by involving them in running the garden program.



MASTERY ::: “I can.”

Strategies:

- Include hands-on activities, projects or exhibits.
- Think of ways to show how gardening relates to workplace-related challenges and activities that apply to daily life.
- Include different ways to investigate and discover.
- Think of multiple outcomes.
- Focus on the long-term goals of learning.
- Provide prompt feedback.
- Model and teach that failure and frustration are learning experiences.



Adapted from “Youth Development Learning Design Walkaround” by Cathann Kress, Ph.D. Cornell Cooperative Extension, 4-H Youth Development



Cornell University
Department of
Horticulture



<http://blogs.cornell.edu/garden>

Adult Learners

When targeting adult audiences consider principles associated with adult learning. Malcolm Knowles in American Adult Educator notes:

- Adults are practical.
- Adults are orientated towards goals and relevancy.
- Adults are autonomous and self-directed.
- Adults have accumulated a foundation of life experiences and knowledge.

Adults are motivated by:

- Social relationships.
- Fulfilling the expectations or recommendations of someone with formal authority.
- Improving their ability to serve mankind.
- Personal advancement.
- Escape / stimulation.
- Learning for the sake of learning.
- Enhancing their reasons for learning.

Barriers to adult participation include:

- Time / scheduling.
- Money.
- Confidence.
- Interest.
- Red tape.
- Family needs.
- Socialized attitudes.

Strategies to engage adult learners include:

- Determine what excites / drives them.
- Identify what has gotten in the way in the past.
- Identify / specify goals.
- Appropriate timing.
- Positive reinforcement.

Create a safe, supportive learning environment where:

- Learning is self-directed.
- Uniqueness is honored.
- Opinions are listened to, appreciated and learning is reciprocal.
- Experimentation, creativity is encouraged with intellectual freedom.
- Abilities and achievements are acknowledged and respected.
- Constructive feedback and dialogue about process is regular.
- Having fun, examining assumptions and collective inquiry is central.



Community

When facilitating the process of cooperation and understanding among a group of people to change and improve even a small aspect of the economic, social, and environmental conditions of the place they live, consider the Asset-Based Community Development approach McKnight and Kretzmann identify in **Building Communities from the Inside Out** (1993).

A set of ready to use community group workshop curricula grounded in asset-based community development principles are available in:

- *Growing Communities: How to Build Community Through Community Gardening* by Abi-Nader, Buckley, Dunnigan & Markley from **American Community Garden Association**.
- *Building Community: A Tool Kit for Youth and Adults in Charting Assets and Creating Change* by **Innovation Center for Community and Youth Development**.

The **Growing Community** curriculum is based on the following **principles**:

- Engage and empower those affected by the garden at every stage of planning, building, and managing the garden project.
- Build on community strengths and assets.
- Embrace and value human differences and diversity.
- Promote equity.
- Foster relationships among families, neighbors, and members of the larger community.
- Honor ecological systems and biodiversity.
- Foster environmental, community, and personal health and transformation.
- Promote active citizenship and political empowerment.
- Promote continuous community and personal learning by sharing experience and knowledge.
- Integrate community gardens with other community development strategies.
- Design for long-term success and the broadest possible impact.

The **Community Building** tool kit acknowledges that when a group forms to bring people in the community together to plan for the future, progress and success does not happen immediately. Building readiness is an important phase to bring a group together, orient group members, and sets the stage for the next phases of work. Building readiness may be a shorter process if the group already has a history of working together or a clear idea of what its mission is. It may take longer if the group really wants to work on building relationships and trust, getting more people involved, and learning more about the community's resources. They offer detail guidance in engaging community groups in the following building readiness activities:

- Getting familiar with the various approaches to youth development and community development.
- Building relationships—exploring what each person brings to the group, team building, and creating youth–adult partnerships.
- Working for some early wins or visible successes to gain recognition and trust from the community.
- Learning about community resources.

Activities

Gardening activities, projects and curriculum are plentiful. In our Cornell Garden-Based Learning program youth development principles guide curriculum development with particular emphasis on fostering gardening skills as well as youth participation in planning and management activities. Lekies and Eames-Sheavly (2007) note these factors had the strongest effect on gardening interest.

Highlighted here are a few of our many inspiring activities, adaptable to a variety of garden settings and age groups. Take time to walk through the myriad of others available under **Activities** at www.gardening.cornell.edu.



Seed to Salad focuses on one of simplest garden activity for beginner success: growing salad gardens.

The curriculum is inclusive of activities and a schedule for an eight-week out of school program or a late winter through spring classroom program. Emphasis is on decision-making and a multidisciplinary approach, including nutrition, physical activity, math, and language arts. Complete teacher/leader instructions include details on finding a site, planting, harvesting and a budget. **Spanish Version available.**



Vegetable Varieties for Gardeners (VVfG) and Vegetable varieties investigation (Vvi) incorporate a citizen science approach to preserving biodiversity and connecting with community.

VVfG is a web-based tool that compiles information from gardeners to help you decide what to grow. Gardeners' information can influence breeding efforts and seed availability. Search or browse detailed descriptions of more than 6,000 vegetable varieties. Share opinions by submitting variety reviews. Garden profile let gardeners build on their experiences of what worked and what did not work in their gardens.

Vvi engages middle and high school aged youth with gardeners. Participants interview gardeners about their opinions on vegetable varieties, and submit their findings to a database that serves as a nation-wide online library of vegetable variety data. Contributing to this aids science research and promotes biodiversity for healthy ecosystems in our farms and gardens.



Living Sculpture highlights art made with plants. The curriculum introduces simple and more involved projects, including topiary, woven branch art, sod sculpture, crop art and more. The project site will help you engage children, youth, families and communities in:

Easy activities - Simple projects suitable to any educational setting. Many are indoor projects.

Community projects - Exciting, larger and more challenging community-scale projects

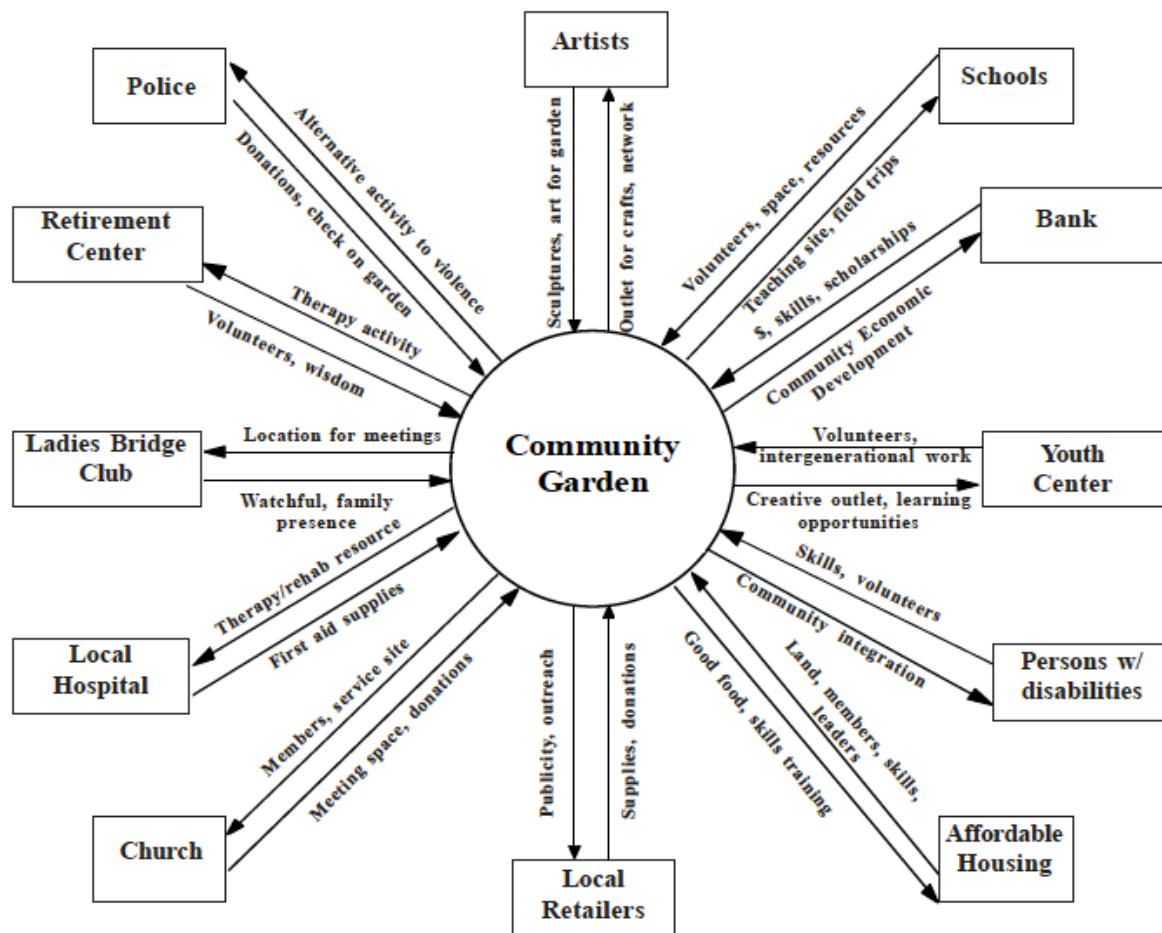
Reference: K. S. Lekies and M. Eames Sheavly. (2007) *Fostering Children's Interests in Gardening*, Applied Environmental Education & Communication. Vol. 6, Issue 1, pages 67-75.

Partnerships

Cultivating a community-based sense of stewardship for a school or community garden means developing relationships inclusive of key leaders in local businesses, churches, governments, schools, social service agencies, other not for profit organizations as well as among volunteers, teachers, parents, youth and families. The relationship formed with a group might take one of these types of organizational structures forms:

- **Network:** exchange information
- **Alliance:** exchange information and share tasks
- **Partnership:** exchange information, share and /or merge resources, and create activities for mutual benefit
- **Coalition:** all of the above with formal links and commitment, joint budget and fundraising, a formal decision-making structure and shared leadership
- **Collaboration:** all of the above plus consensus on decision-making and a formal evaluation process; the goal is building an interdependent system to address issues and opportunities

To gain a better sense of the community partnership that will lend support to grow and sustain your garden program consider completing the Mapping Reciprocal Partnership activity found in the *Growing Communities: How to Build Community Through Community Gardening* by Abi-Nader, Buckley, Dunnigan & Markley from **American Community Garden Association**. Here is a sample product from that activity:



There are no blueprints for building and maintaining partnerships, but it is useful to have an understanding of the stages of partnership development, from formation to implementation, maintenance, and achievement of goals. The processes are not linear and rigid, but flexible and repetitive, and there is considerable overlap between one stage and another. The **Who Health Organizations Global Partnership** to Stop TB published *A Pocket Guide to Building Partnerships* that is worth the short read. It outlines these partnership-building phases:

1. Gather insights in areas such as mutual need, vision, mission, values, culture...
2. Be able to rely fully on each other.
3. Needs assessments and development of coordinated action and programs.
4. Maintain momentum embedded in routines.

Take time to review others community building resources available under **Panning and Organizing** at www.gardening.cornell.edu including:

Sowing the Seeds of Success - This booklet details the organizational steps needed to initiate a successful community gardening project with kids. Key chapters highlight how to define roles and responsibilities, form and manage partnerships, create an identity, raise funds, and more!

Find Partners and Gardening Expertise at Your Local Cooperative Extension

The Cooperative Extension System is a nationwide, non-credit **educational network**. Each U.S. state and territory has a state Cooperative Extension office at its land-grant university and a network of local or regional offices. Local experts who provide useful, practical, and research-based information to citizens staff these offices. Check out your local office; it may be a gardening network hub. Find contact information at www.nifa.usda.gov/Extension

Find at www.extension.org:

- Gardens, Lawns & Landscapes
- State Master Gardener Programs
- Ask an Expert
- Extension Master Gardener blog

Find at gardening.cornell.edu:



Volunteer Engagement

An easy mistake to make is turning to volunteers because help is needed and there are no funds available to hire. A sustainable successful volunteer program takes thoughtful planning. There is professional field of Volunteer Program Administration including a performance-based credentialing program organized by **Council for Certification in Volunteer Administration**. Here using the I.S.O.T.U.R.E. model, the basic components for development and management of a volunteer program are outlined. Consider your plan for each.

Identifying

A project/program/organization's needs assessment will help identify what jobs need to get done. They might included:

- Education – peer to peer, specific audience...
- Planning, technical or clerical support...
- Development of resources or programs...
- Supervision, leadership...

And what type of person is needed to fill that job. For example:

- Paid staff member or unpaid volunteer.
- Any specific knowledge, skills and attitude.
- Any constraint on availability – episodic, once?

Job descriptions are essential for every position no matter size. Include:

- Position Title
- Length of Commitment
- Time and Place
- General Purpose
- Specific Responsibilities
- Qualifications
- Training
- Supervision
- Benefits



Selecting (Recruiting)

Though recruiting might be as simple as asking, sometimes connecting with the individuals who might be the best match for the jobs available can be challenging. Explore what others (such as R.S.V.P) in your area are trying and find volunteer recruitment resources at www.energizeinc.com.

Depending on an organization's risk management and human resource policies, selecting might also involve a screening process including interviews and background checks.

Orienting

The focus here is to prepare volunteer for relationship with your organization. What should every volunteer know? Do you have a paid staff orientation inclusive of organizational structure as well as mission and goals that might be appropriate or modified for volunteers? Also take time to familiarize volunteer with specific expectations and responsibilities. Consider orientation not as a one-time event at the start of a volunteer experience but rather an ongoing opportunity for relationship between volunteers and the organization.

Training

Pre-service training aims to prepare volunteers to execute the duties in their job description. Use the job description to determine the knowledge, skills and attitudes needed. Fold in other organizational goals such as a desire to develop a cohort or community of volunteers as a team. Also refer to the **Meeting Needs** section as understanding your audience is essential to a successful plan.

Often people are motivated to volunteer out of desire to help others and to continue their own life-long learning. Continuing training/professional development opportunities for volunteers can serve to improve or change effort and is a reward that sustains their commitment. Engaging volunteers in identifying on going training needs is one way to build in two-way communication with volunteers.

Using

Thoughtfully place volunteers for success. Let go of certain responsibilities to facilitate the empowerment of your volunteers. Moreover, cultivate two-way communication.

Consider the different types of volunteers your organization, program or project might use for the jobs you have identified. An effective and efficient use of your time and volunteers' is to tailor the implementation of I.S.O.T.U.R.E. to types of volunteers.

- **Episodic** – If a volunteer has committed to coming occasionally to help possibly with an event, both the organization and the volunteer are likely not interested in extensive orientation and training. The focus could be on a simple job that can be picked-up or dropped on a moment such as the perpetual need for weeding.
- **Stipend** – AmeriCorps volunteers are an example of individuals who receive a small amount of pay for their work. A stipend might provide extra motivation but also extra tracking of specific effort.
- **Teens or College Aged** – Discovering what is motivating interest is critical to proper placement for maximum success. Do they seek leadership experience, service learning?
- **Families** – What jobs can be done by people of all ages?
- **Seniors** – Special attention to communication style and approaches can be essential even down to the details of font size on instruction sheets.
- **Individuals with a disability** – Clear job description will help volunteers know if something is beyond their limits. Two-way communication helps volunteers express their interest and talents and program leaders to make the best matches.
- **Unemployed** – Though these volunteers might be short-lived, they can commit considerable time especially if the focus is on gaining marketable skills and experience.
- **Virtual** – Increasingly popular.
- **Middle Managers** – Engaging volunteers to organizing other volunteers can further extend reach but there is a special need to have a well-documented plan.

Recognizing

It is important to recognize recognition. It can be critical to motivation and retention of volunteers as well as an opportunity to promote positive feelings about the program, raise awareness about efforts and recruit new volunteers. Consider what is most important to recognize in volunteers efforts. Is it participation, progress towards goals, achieving standards of excellence, cooperation or another aspect? Here are some additional keys to success in volunteer recognition:

- Emphasize success.
- Consider public recognition though not appropriate or welcomed by all volunteers.
- Do in a personal and honest manner.
- Make it timely.
- Clearly connect accomplishment and recognition.
- Recognize in proportion to achievement.
- **Tailor recognition to volunteers.**

Look for additional recognition ideas by exploring what others (such as R.S.V.P) in your area are trying and find volunteer recognition resources at www.energizeinc.com.



Evaluating

First consideration is what to evaluate? What information is needed for success in volunteer engagement? Who will use the results? Will the contributions of volunteers be in an organizational report detailing hours and types of service? Will program planners use it to optimize retention and recruitment and or provide feedback to individual volunteers on performance? Is it valuable to know what volunteers think of their experience in the program and how they are supervised? Will volunteers be engaged in evaluating the program activities with target audience? Use the Evaluation section of this guidebook to create an evaluation plan for the volunteer program as part of the overall project evaluation plan.

For more information about effectively using volunteers in the design, delivery and evaluation of community-based programs see the *Achieving Success Through Volunteers* curriculum developed by the Michigan State University Extension - (MSUE) Volunteerism Area of Expertise (AOE) team.

Program Framework

So you want to start a garden project? Before you dig take some time to formulate clear program outcomes and a path to achieving them. This builds a strong foundation and will maximize potential success in recruiting additional supporters and participants to embrace the gardening idea.

A logic model is a tool that can help move an idea into a plan that can be implemented, evaluated and communicated more effectively. Many funders and organizations require logic models. Consider the following topics individually and discuss further with a formal or informal planning group and/or stakeholder groups. Use conclusions from discussions to complete your garden-based learning logic model in the template provide at the end of this section.



Situation/Need/Issue

Where did the idea for the garden project or program come from?

What is there concern about? What do we know about it? Is there evidence of demonstrated need? Observed symptoms? Did the community of interest identify need? Who has a stake?

What is your individual, program or organization's mission? Priorities? Who comes to your programs? With whom do you want to connect?

Write a succinct statement to summarize the key points of the **Situation**. This is foundation of your logic model.

Resources

Identify the resources you have available for this garden effort. Time? Staff members? Specific volunteers? Money? Contributions? Equipment? Educational resources? Partnerships?

What other resources or assets will be critical to the project?

Outline available resources in the **Inputs** column of your logic model.

Activities

What will be done? Gardening indoors, schoolyard, community setting...? Specific projects? Field trips? Events? Publications? Websites? Social Media? Other products?

Many find the logic model's **Outputs-Activities** column to be the easiest piece to fill in.

Participation

Who comes to the activities? Who participates? Who will you reach? Individuals, families, groups, businesses, organization, communities, specific decision makers? For example:

- All low-income families living in the Willow Street apartment complex.
- Elementary school youth participating in afterschool program.

Be as specific as possible with “who” is targeted with activities. If the gardening project will culminate in a garden for a specific audience have you asked this stakeholder group what they think the situation/ need is and what activities and outcomes are desired? How might you create on going opportunity for two-way communication?

Include identified target audience in the **Outputs-Participation** column of your logic model.

Outcomes to Impacts

So what? What difference will your effort and activities make for the participants? What will change? Consider your responses as change statements that occur along a continuum from short-term achievements to longer-term end results (impacts).

Link **Short-term Outcomes** to changes in factors such as awareness, knowledge, skills, and attitudes. For example:

- Low-income families enhance their **awareness** of the variety of vegetables available.
- Neighborhood residents increased their **knowledge** about how to select appropriate vegetable varieties to grow.
- Community gardeners developed their **skills** in growing plants from seeds.
- Elementary students improved their **attitude** towards consumption of fresh vegetables.

Link **Mid-term Outcomes** to changes in actions such as behavior, decision-making and policy. For example, the following changes might be expected results of an activity:

- Low income families increased consumption of a variety of vegetables.
- Community gardeners form a network to share plant material.
- City counsel adopts a community garden development policy.



Link **Long-term Outcomes (Impacts)** to ultimate goals of a program that might be achieved in one year or take 10 or more years to be achieved in collaboration with other efforts. For example:

- Building a sense of community through the garden setting.
- Develop skills and knowledge that can expand into flexible work opportunities.

Assumption

The beliefs key planners and stakeholders hold can be critical to program implementation success and achieving desired outcomes. Consider viewpoints about the way a garden project will operate, where the knowledge base behind the effort comes from, the environment in which it is to be implemented, how the participants learn and other underlying beliefs then outline them in **Assumption** section of the logic model. Some examples of assumption include:

- People will be motivated to grow their own food if given opportunity.
- Funds and people external to target audience can serve as catalysts for changing target audience's interest in food production.
- Gardeners can be recruited to work with unfamiliar neighbors outside their peer group.
- Low-income families are willing and able to attend gardening training sessions.
- Knowledge about simple approaches to growing food will lead to more gardening.

External Factors

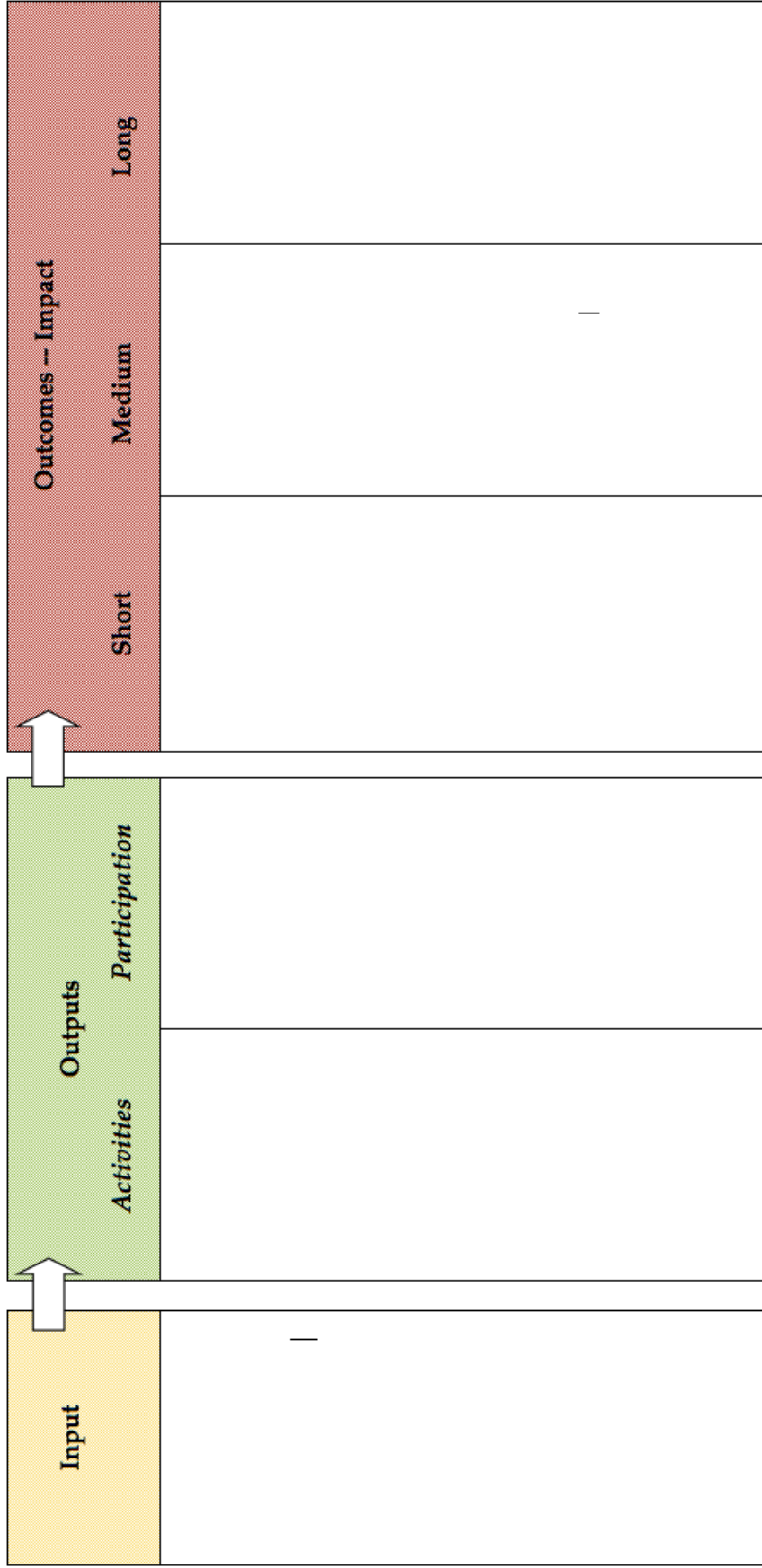
What may influence this gardening effort or be influence? In the **External Factors** section of the logic model outline the most potentially influential factors on the implementation and outcomes of the garden project such as culture, climate, economic structure, demographic patterns, political environment, background and experience of program participants or changing policy and priorities.



Logic model information adapted from: Taylor-Powell, E., and Henert, E. (2008) *Developing a logic model: Teaching and training guide*. Madison, WI: University of Wisconsin-Extension, Cooperative Extension, Program Development and Evaluation. www.uwex.edu/ces/pdande

Template Garden-Based Learning Logic Model

Program title
Situation



Assumptions	External Factors
--------------------	-------------------------

Evaluation

Program evaluation is often overlooked. Advantages to providing evaluation information (data) about a garden and garden programming include:

- Demonstrate accountability to participants, funders ...
- Generate a much clearer picture of program outcomes and impacts.
- Continue or increase support of the garden and programming.
- Create an opportunity to:
 - Increase participant satisfaction and success.
 - Streamline and improve programs.
 - Discover new activities or ways of aggregating tasks.
 - Collect vital feedback about the program providers.
 - Alter the garden/ program to better meet participants' needs.
 - Find positive secondary outcomes.

It is very important a plan to evaluate a garden and gardening programming be created and implemented at the very beginning, when the garden or program is in the conceptual phase.

What data to collect

Identify what you want to know about your garden and gardening program. Consider all your invested resources, activities and stakeholders (including paid staff members, volunteers, funders and participants). What are the desired outcomes and impacts? Additionally, determine what evidence do you need to answer your questions?

Quantitative evaluation emphasizes gathering number-based data. Some possibilities include:

- How many people actively participate in the garden?
- How many families are positively impacted by the garden programs?
- How many pounds of fresh vegetables and fruits are produced for military families?

Another example of quantitative evaluation data is measuring program participants' changes in knowledge, skills, abilities, and even perceptions after gardening for a set period of time. A common approach to measuring these changes is giving participants a set of questions (pre-test) when they first begin the program and/or first start to garden, and then give the same participants the same set of questions (post-test) after they complete a period of programming and/or gardening. Measure the difference in responses.

Sample questions

Pre-test/Post-test (Knowledge)

1. Name three (3) main benefits of mulching plants.
2. What is the essential nutrient that aids green growth?
3. Soil that has a pH of 6.2 is classified as _____.

Alternative wording...

If the pH of the garden soil is 6.2, it is:

A) alkaline B) neutral C) acidic

Another approach to pre-test/post-test evaluation that is best used to test skills and abilities, is to ask participants to demonstrate/perform a set of skilled activities (adding compost to soil or planting a vegetable, for examples) when they first begin the program and then again after they finish. Observe and measure the difference.

A perceptions pre-test/post-test addresses views and value statements (about themselves, the program, gardening in the military or a combination of whatever you wish to measure).

<i>Sample questions</i>							
Pre-test/Post-test (Perception)							
For each of the following statements, think about how much you agree or disagree with the statement. Please circle the number that best tells us how much you agree, starting with 1 (Strongly Disagree).							
	Strongly Disagree - Strongly Agree						
Organic gardening is not the best method for growing vegetables	1	2	3	4	5	6	7
Participating in the X Base Garden program has a lasting affect on base families	1	2	3	4	5	6	7
A garden is more successful when team management is used	1	2	3	4	5	6	7
Most military personnel do not understand the significance of gardening as a therapeutic activity	1	2	3	4	5	6	7
Youth involved in the gardening program go home and forget most of what they learn	1	2	3	4	5	6	7
Military rank is very apparent, even in a garden	1	2	3	4	5	6	7
Teaching adults gardening is best done by non-military professionals	1	2	3	4	5	6	7

Quantitative evaluation can also provide educational activities for the participants as well as data for the program managers. For example, experiments can be conducted where one part of the garden receives drip irrigation and the other part of the garden receives overhead watering, measuring how much water is saved and how well plants grow with each watering method. Garden managers save water and discover the best watering method for their garden; participants learn the advantages and disadvantages of different watering methods.

Qualitative evaluation focuses not on collecting numbers but other forms of data through:

- Interviewing garden program participants.
- Documenting observations of garden activities; written, pictures or video.
- Recording the artwork for and about the garden created by participants.
- Encouraging gardeners to keep a journal and share highlights.
- Training participants to interview and record each other’s thoughts.

The impact of qualitative data, if presented in the appropriate way, can be immense. When a funder reads a participant quote “This garden saved my life,” the strength of qualitative evaluation data becomes very clear. A fortified way of conducting evaluation is to combine numbers with quotes or visuals through a mixed-method approach, collecting both essential quantitative and qualitative data.

When to collect data and use

Another aspect of evaluation involves when data is collected and acted upon. **Formative** evaluation means collecting garden and/or program data from the beginning and instituting corrections and changes immediately based upon the data. For example, it might become clear that participants are more successful if they garden as a family unit, so the program managers institute changes immediately to allow or encourage this activity. **Summative** evaluation

means collecting data throughout the life of the garden or program and then analyzing the data when activities end, mainly with an eye to altering the next garden or program based upon the findings. Both have their advantages and disadvantages.

A fortified way of conducting evaluation is to combine both formative – making appropriate changes along the way – and summative – making changes at the end of activities for the next garden or program.

Consents

A few brief words about obtaining consent from anyone whom you choose to interact with for evaluation purposes. Any research or evaluation that is conducted through the auspices of an educational institution in the US must pass through a rigorous review (institutional review board) to insure the health, safety and privacy of participants. This includes, but is not limited to, the following. Research & evaluation participants:

- Will be given the choice of participating without any coercion.
- Have the option of ending participation at any time.
- Have no undue burden placed upon them in the course of the research/evaluation
- Can expect their private information to be protected and that all reports with their words or video/audio recordings included have their expressed, signed consent.
- Will be told about any potential physical or emotional harm before participating.
- Are told, in detail, the purpose of the research/evaluation and what their participation entails.
- Are given contact information to report any misconduct on the part of researchers/evaluators and to obtain a copy of the final report or video.

Most agencies including military installations have procedures in place regarding informed consent. Check with your administration to find and implement procedures. There are many sources for a template to set up your own, including U.S. Dept. of Health & Human Services, Office for Human Research Protections (OHRP) [IRB guidebook](#).

Find additional evaluation resources at gardening.cornell.edu in the **Program Tools** section.



Fundraising

Regardless of the scope or audience of your garden project, at some point you will likely have to raise funds or secure in-kind donations to support or advance facets of the garden program.

Grant writing fundraising requires researching foundations and government agencies and developing proposals. **Corporate** fundraising requires figuring out how your organization: what you do, who you serve, who you have contact with, might help a corporation so that they would want to partner with you and give you some money. **Government** fundraising means seeking funding that originates as taxes for your projects and programs. **Grassroots** fundraising involves using a wide variety of strategies to invite as many people as possible to give donations of widely varying amounts. Lots of people are involved in raising the money needed and no one source of money is very important.

Employing several approaches can improve chances for success in securing the needed resources. Here we touch on two approaches: grassroots fundraising and grant writing.

Grassroots Fundraising

Grassroots fundraising is important since it is also a publicity opportunity, and can create a strong sense of ownership among all who contribute. One school brought the circus to town each year to raise money for the garden. This fundraiser generated about \$1000 annually, and of course, provided an enjoyable venue for hundreds of families and community members, all of whom were investing in the garden while having a good time. Another community program created small, inexpensive bouquets and sold dozens of them in the highly visible foyer of the local supermarket for Mother's Day. Consider:

- Activities can be time and energy intensive.
- With multiple approaches, the funds can add up to something considerable.
- Car washes, tag sales, bake sales, bottle drives, selling seeds, bulbs or seedlings, penny and dollar drives have proven to be successful.
- It is an opportunity to fully engage youth as they can identify approaches, and follow through on each aspect of planning and completion.
- All community members can participate.
- It raises awareness, participation, and ownership among those who help or contribute.



Donations from local businesses can make a significant impact on a program, and do require planning and coordination. It's wise to designate one person as a point of contact, so that businesses do not receive multiple requests, making your program appear disjointed. Sometimes stores have affiliated foundations to approach for materials; do your homework to find out. Some examples of requests:

- Plant, soil, and mulch donations from a nursery or garden center.
- Donation of a wheelbarrow, fencing or tools from a home improvement store.
- Monetary donation from a local bank.
- Refreshments provided by a grocery store or restaurant.
- Free rental of a rototiller and other tools.

Before approaching businesses, create a **project folder**. This concise packet of relevant program materials can be used to represent your program and its needs and can be left with a business for further review. Know your tax status and to whom checks should be written before you approach businesses. Consider including in your project folder:

- Succinct, well written one-page description of your program.
- Letter of endorsement and support from the director, principal, or coordinator.
- Photo page, with drawings and statements from participants
- Garden plan or design.
- List of key project leaders, participants, and volunteers.
- Specific, realistic and concise list of your project needs.
- Contributors in the community to date.

The more you can spread the news regarding the success of what you are doing, the more comfortable local businesses, private donors and others will feel about investing in a well-planned, known entity. As you implement your garden project, grow your project folder by gathering positive feedback, anecdotes, and evaluation data to highlight what you are doing well. There is an old fundraising adage that “money begets money.”

- Identify a point person with photography, video, and writing skills as a documentarian.
- Contact the local news for an article, and then, include it with your project folder.
- Apply for a community award, and publicize it when you receive it.
- Make a point of thanking everyone who participates or assists with your program.

Grant Writing

Since writing a large grant proposal can be daunting, do your research, and identify some small regional foundations or agencies that support projects in your location, county or state. Local arts-, environment-, or science-based agencies often work well as a jumping off point. Securing a small grant can grow confidence, and also provides demonstrated success in preparation for something larger. Consider:

- It is an important courtesy to notify all program personnel, from your organizational director or school principal, to public works and grounds crew, prior to preparation and submission.
- Carefully read grant guidelines, include all the required information and do not hesitate to call the agency to ask for clarification.
- Be attentive to format, page limits, and number of copies requested.
- Be concise and well organized with clear goals, objectives, and outcomes.
- Convey enthusiasm, while highlighting accomplishment so far, as well as the strengths of your program and a plan to sustain it.

Write for Success

Begin writing early, well before the deadline. Read through it and ask yourself: can you remove words, and still carry the same meaning? Then, begin to prune.

Identify key people with different skill sets to read through the grant and provide edits. Give them a realistic time frame to do so! Asking them the day before the proposal is due is highly inconsiderate and does not reflect well on you or your program.

Remember that real people read these proposals. Complicated wording and jargon only make a proposal difficult to read. Stick with the basics of who, what, when, where, how, and perhaps most importantly, why this is critical and who will benefit from it.

Each section of the proposal requests specific information. For the rationale/background information/justification section do the needed homework to include research with citations (such as those listed in Benefits of Garden-Based Learning section of this guide). Be certain to connect your project goals/objectives with those of the funding agency. Provide specific reasons why what you propose is so vital to the topic identified as critical by the organization.

Only three to six well written objectives are needed. Too many make assessment and follow through difficult. Be certain that objectives are measurable, and are aligned with intended outcomes. For example, let us consider this objective:

To teach neighborhood residents how to effectively engage the interest of family members in growing herbs and vegetables in a community garden plot.

Plans for measuring this objective could include observing, surveying and interviewing family members.

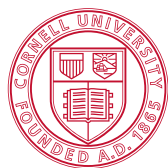
One focused, clear, measurable objective can generate a number of positive outcomes from which to choose. To illuminate potential outcomes, place the phrase “as a result of” at the beginning of the objective. As a result of teaching neighborhood residents how to effectively engage the interest of family members in growing herbs and vegetables in a community garden plot...

- Fifteen residents will learn garden-based learning activities to share with family members.
- Ten families will be inspired to garden in community garden plots.
- Residents will take home lessons learned and begin family gardening at home.
- Community garden organizers will have capable assistance in the garden, allowing them to focus their attention on involving additional families and organizing shared resources such as tools and compost.
- Community officials will observe demonstrated successes and provide continued support for the continual development of community gardens.

Identify starter opportunities by searching the Internet for regional foundations, or local businesses that may have affiliate foundations, such as Lowes, Target or Wegmans. Try different search terms, starting with familiar names for your region (e.g. Finger Lakes Region, Central New York) and adding terms such as foundation, funding agency. Focus your search with other terms (e.g. health, environment, arts, children, youth). “Gardening” may be too narrow. A dedicated search will surface some local opportunities. For example, some programs in Central NY have benefited greatly from the generosity of the small and vibrant John Ben Snow Foundation. Complement your Internet search by visiting local United Way agencies and talking with community leaders.

As you grow in confidence there are larger foundations that have ongoing opportunities such as Annie’s Grants for Gardens, The Bay and Paul Foundation, Delta Airlines Foundation, Toyota Tapestry Grant Foundation, American Honda Foundation and National Gardening Association Youth Garden Grants.

Other programs offer lists of these grant opportunities such as School Garden Wizard, California School Garden Network, the North American Association for Environmental Education and American Community Gardening Association.



Cornell University
Cooperative Extension and
Department of Horticulture

Editor

Lori J. Brewer, Senior Extension Associate, Family and Adult Education

Contributing Authors

Marcia Eames-Shevly, Senior Extension Associate, Youth Development

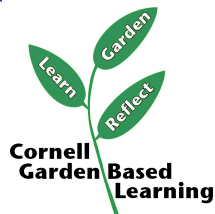
Mark A. Miller, PhD., Project Evaluator

Extension programs and employment are available to all without discrimination. Evidence of noncompliance may be reported through your local Extension office.

This material is based upon work supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture, and the U. S. Department of Defense under Award No. 2009-48667-05833. Developed in partnership with Purdue University and Cornell University.

Any opinions, findings, conclusions, or recommendations expressed herein are those of the authors and do not necessarily reflect the view of the U.S. Department of Agriculture.

Military-Extension Partnership



This material is based upon work supported by USDA and the United States Department of Defense under Award No. 2009-48667-05833.