



Planning a Successful School & Community Garden Program

Modules Two & Three Wrap-Up

Introduction to Module 4: Evaluation and
Assessment; Building Your Toolbox



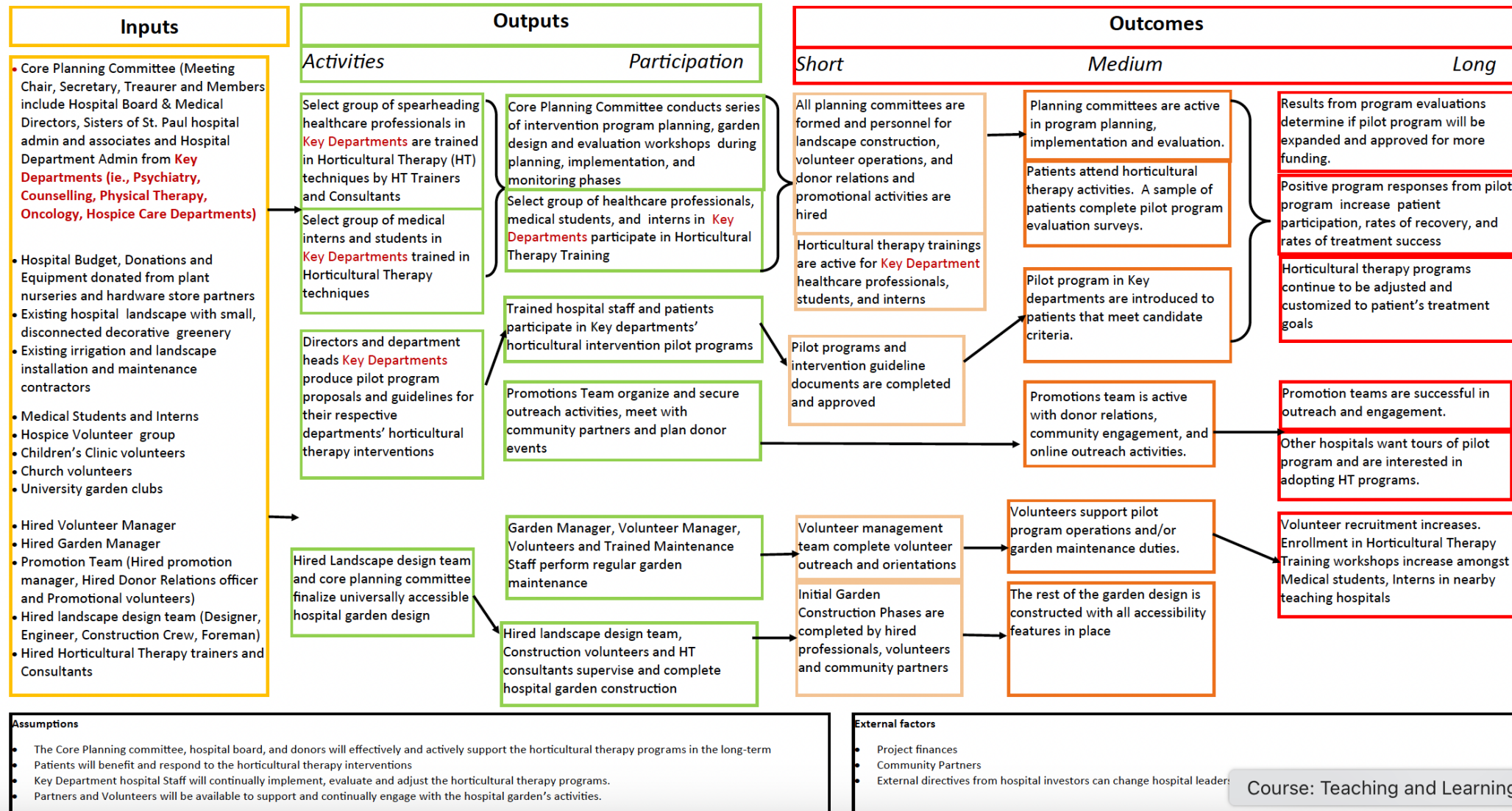
✓ *Developing Garden Program Goals Using Logic Models*

✓ *Tapping Community Resources*

Next: Evaluation and Assessment; Building Your Curriculum Toolbox

Program: Hospital Garden in Cebu, Philippines Logic Model

Situation: Psychiatric, Physical Therapy, Rehabilitation, Oncology, and Hospice Care departments need novel and evidence-based approaches upgrade standard modalities of care. Renowned hospitals and long-term case studies in Asia, Europe and North America find well-developed horticultural therapy and therapeutic horticulture programs support patient recovery and treatment goals. A major private, not-for-profit hospital in metro Cebu wants to integrate horticulture therapy landscapes and programs to improve patient satisfaction and recovery options for short-term and long-term inpatient and outpatient clients.



Checklist For a Good Garden Site

Does your garden have:

- Well-drained soil, free of heavy metals such as lead
- Full sun and protection from wind
- Proximity to a water source
- Nearness to classrooms or meeting place with seating and shade
- Storage space for tools and equipment
- Availability of additional space for composting, pathways, improvements, expansion
- Security from theft and vandalism (do people who could watch over the site live nearby?)

Other things to consider:

- Are there on-site materials that need to be removed, such as blacktop or debris?
- Should you perform a soil test before planning? If so, contact your local Cooperative Extension Office.
- Will you build raised garden beds or plant directly into the ground?
- Is the site location safe for participants? (Will motion-sensor lights be needed, and can they be installed?)
- Will you need a fence to prevent unwanted wildlife from entering?
- Is there a “garden guardian” who lives nearby who can watch over the site to help prevent theft or vandalism?
- Will you have a garden sign (or numerous signs) to educate visitors when no one is available to answer questions?
- How can you ensure the site is accessible to all?
- Are there public restrooms nearby?
- Is the site easy to get to? Accessible by public transportation? Is parking available? Does it have a bike rack?
- Have you communicated with the groundskeeper of the site?

Notes:

3.1 Criteria for a Good Garden Site

3.2 Free & Low-Cost Materials

Assignment 3.2 Michelle Domocc

Item	Source	Costs	Where it comes from	Pros	Cons	Website
Mulch	Chip Drop	Garden point person may need to travel to site to manage drop off	fresh cut wood chips from arborists around North Bay Area	Excellent volume and quality of free wood chips.	Sometimes you have to wait a few weeks to receive call. Sometimes Chip Drop calls you without much notice and garden point person needs to be at the garden site to receive the garden chips. The volume of garden chips can vary from 4 to 20 cubic yards. You have to ensure that you have a sufficient drop site to receive the chips with obstructing any roadways or vehicles. Specifics: https://getchipdrop.com/expectations/	https://getchipdrop.com/
	Natural Arbor Care	Garden point person may need to travel to site to manage drop off	woodchips from tree service prunings	Excellent volume; wood chips consist of green wood, pine needles and leaves; Tree service calls before attempting deliveries	Volume varies from 8 to 10 cubic yards. The drop off schedule varies. First come, first serve basis	https://naturalarborcare.com/free-wood-chips-bay-area/
Compost	Union City Free Compost	Garden point person may need to travel to site to manage drop off	Local city source		Compost delivery schedule varies.	https://www.unioncity.org/777/Free-Compost
Compost Ingredients	Veggie food scraps from nearby vegetarian restaurant	Garden staff and volunteers need to schedule visit to arrange scrap pick ups; purchase buckets or containers with well-fitting lids so that food can be transported without causing unpleasant odors	Local source	Existing event catering relationship; friendly rapport; 9min drive; the garden needs a small amount of scraps for the demonstration vermicompost tub	Volumes may vary.	

Thank you, Michelle

3.3 Network with an Existing Garden Program

- For this assignment, find a school or community garden in your local town, city or region.
- Contact your local Cooperative Extension office, school district or town/city website to locate any near you.
- If you can find contact information for garden organizer(s), explain that you are developing a new garden project and ask if you can arrange a short meeting with them at the garden to learn more. In my experience, most garden organizers are happy to share information with others.
- School gardens may not be publicized because they are not open to the public, so check local school districts for information.
- Your state and local government websites may have details on community gardens near you.
- For example, here is a map of Community Gardens for the Department of Health in New York State <https://compost.css.cornell.edu/communitygardenmap.html>.

3.3 Networking: Youth Garden in California

1. Did you gain any insights as a result of your interview? Is there anything you will do differently in your program now?

I contacted a friend who works in a youth garden located on urban community farm. I learned how they built a new high school mentorship with new partners. A cohort of 10 local high school interns are employed to serve as mentors and teachers for younger children. They teach and hold events around garden science, environmental justice and nature-based play. The high schools build leadership and program management skills.

2. How will you continue to network with and learn from other gardening programs in your area?

The interviewee shared contact info of leading garden-based youth leadership programs in the Bay Area. I think the garden management team would like to tour gardening programs with well-funded, successful youth leadership programming.

3. Feel free to share any aspect of your conversation that seems relevant to your own program planning.

The high school internship program stemmed from a collaboration between the urban community farm and the 4-H program. Most of our partners are rooted in cultural and environmental justice programs. It would be great to tap partners that have their roots in youth leadership, outdoor science, and garden-based learning. This type of partner may lead to new resources.

Module 4:

*Evaluation and
Assessment*

*Building Your
Curriculum Toolbox*



*Module Four
Evaluation &
Assessment*

Assignment 4.1: Your Evaluation Plan

Create a document showing a proposed evaluation plan for your garden-based learning program.

Refer to your logic model, review your garden outcomes.

Can be in the form of a text document or spreadsheet.

Outcome Measured	Method	Evaluator	When
Students will experience how the garden changes over the seasons by seeing, smelling, touching, or tasting plants in different semesters of the school year	Garden Drawing Evaluation for Kindergarten Circle	Ms Karen	-Beginning of the school year, prior to gardening activities -At the end of the Spring semester
	The Quick Whip for Lower Elementary Students	Lower EI Teachers and/or Assistants from each classroom	After each gardening session and/or project
	Self-assessment survey for Upper Elementary Students	Upper EI Teachers and/or Assistants from both classrooms	At the end of the school year
Students, Teachers are Parents will feel more connected to each other and build stronger relationships through working in the garden	Self-assessment Survey for Parent Garden volunteers and teachers	Lead Gardening Volunteer	At the end of the school year when PTA surveys go out

Evaluation Plan for the Hoosick Falls Senior Center Community Garden

Outcomes to Be Evaluated

1. **Increased Nutrition Awareness** – Seniors and their families gain knowledge on healthy eating and food preparation.
2. **Community Engagement** – Seniors, volunteers, and youth actively participate in gardening activities and learning sessions.
3. **Sustainability and Garden Maintenance** – The garden remains well-maintained and continues to function beyond the initial program phase.

Evaluation Method	What It Measures	When It Will Be Used	Who Will Conduct It
Pre- and Post-Surveys	Changes in nutrition knowledge, gardening skills, and attitudes about healthy eating.	Before the program starts and after a full growing season.	Program staff and volunteers.
Observation & Participation Logs	Number of seniors and community members attending gardening activities and learning sessions.	Weekly throughout the program.	Program staff and trained volunteers.
Produce Harvest Records	Amount of fresh produce grown and used in meals or distributed to participants.	During each harvest cycle.	Garden volunteers and senior center staff.

Additional Evaluation Considerations

- **Adjustments Based on Data:** If participation drops, outreach efforts may be improved to engage more seniors and families.
- **Feedback Collection:** Informal discussions with seniors and volunteers will help gather insights into what's working and what can be improved.
- **Long-Term Tracking:** Follow-up surveys and volunteer engagement tracking will help assess the sustainability of the garden beyond the initial phase.

4.1 Your Evaluation Plan

I would like to do a qualitative evaluation, to keep track of the number of participants and also how much grows (how many vegetables, etc). This evaluation would help confirm another desired outcome, that students grow vegetables and herbs. We keep track of the number of participants on a daily basis throughout the academic year after-school program and during the summer enrichment program. Similarly, we will track vegetables/harvested daily when the program participants attend. The teachers track attendance for the after-school and summer enrichment program. I will oversee the students counting the harvest this summer.

I will create a pre-test and post-test for our summer enrichment participants to see what they learn about gardening and how to grow plants. The post-test will aid me in evaluating one of the major desired outcomes of our gardening program -- students gaining knowledge of the scientific concepts taught regarding gardening, energy production through photosynthesis and geochemical cycles. The pre-test will be given on the first day of the summer enrichment program and the post-test will be given on the second-to-last day to ensure a maximum number of responses. I will create the pre-test and pro-test and as the teacher of the biology class during the summer enrichment program, I will administer the pre- and post-tests with support from my assistant.

A third way I will evaluate the garden program is to create a survey for students to answer at the end of our summer enrichment biology/garden course in late July/early August. This will give me some direction on which teaching activities were both effective and enjoyable for the students and which were less interesting. Last summer, I created a survey which was given to students at the end of the program. The students who attended enrichment were required to take part in the Biology/garden class. Some did not enjoy it, some were indifferent and some really enjoyed it. Nearly all learned something about photosynthesis and plants. I will create the survey and have students answer it during their biology class with me during summer enrichment.

Evaluation is always part of my lessons plans, so I can determine how well I was able to share information with the students, determine knowledge gained and retained, and which activities were successful and which should be revamped or replaced.

Evaluation Plan for Veteran Community Garden

Outcome to Evaluate:

Improve connectedness and mental well-being among veterans through participation in the community garden.

Evaluation Methods:

1. Pre- and Post-Participation Surveys (Quantitative & Qualitative)

- **Purpose:** Measure changes in veterans' sense of connectedness, belonging, and mental well-being before and after participating in garden activities.
- **Implementation:**
 - A validated well-being scale (such as the WHO-5 or PHQ-9 for mental well-being) and a connectedness scale (such as the Interpersonal Support Evaluation List) will be administered before participants begin and after 6 months of involvement.
 - Open-ended questions will ask about veterans' experiences, perceived support, and any changes in their emotional state.
- **Timing:**
 - Baseline survey during program onboarding
 - Follow-up survey at 3 months and 6 months
- **Evaluator:** Research & Evaluation Team within The Mission Continues (TMC)

2. Focus Groups & Interviews (Qualitative)

- **Purpose:** Capture in-depth personal experiences and insights into how the garden impacts veterans' mental health and social connections.
- **Implementation:**
 - Conduct small focus groups and one-on-one interviews with participants to explore themes like community engagement, stress reduction, and emotional well-being.
 - Facilitators will use structured prompts but allow space for organic discussion.
- **Timing:**
 - Midway through the growing season (Month 3-4) and at the end of the season (Month 6-7).
- **Evaluator:** Third-party evaluator (such as a local university or mental health professional) to encourage open and honest feedback.

3. Behavioral Observation & Participation Tracking (Quantitative & Behavioral)

- **Purpose:** Assess engagement levels and social interactions as an indirect measure of connectedness.
- **Implementation:**
 - Track volunteer attendance, frequency of participation, and engagement in social activities (e.g., mentorship, teamwork, leadership roles).
 - Observe interactions and engagement during garden activities, noting whether veterans work collaboratively, form friendships, or return for multiple sessions.
- **Timing:**
 - Ongoing throughout the season, with monthly check-ins.
- **Evaluator:** On-site project lead and trained volunteers.

Who Will Conduct Each Evaluation?

Evaluation Method	Conducted By	Frequency
Pre- and Post-Participation Surveys	Project Manager / TMC Research Team	Baseline, 3-month, and 6-month follow-ups
Focus Groups & Interviews	External Evaluator (University Partner or Mental Health Professional)	Midway (Month 3-4) and End of Season (Month 6-7)
Behavioral Observation & Participation Tracking	On-site Project Lead & Trained Volunteers	Ongoing, with monthly check-ins

Final Reporting & Actionable Insights

After data collection, findings will be analyzed and shared with stakeholders, including community partners and funders. Results will be used to refine programming, enhance veteran engagement strategies, and explore future funding opportunities for garden expansion.

Thank you, Michelle

Evaluation Plan for Hospital. The Youth Garden in California has an established set of evaluation tools that can be easily applied to new garden programs. I decided to focus on the hospital garden. Below are some initial evaluation ideas that can be integrated into the hospital's existing patient monitoring practices. In reality, the hospital has established assessments novel treatment interventions. Program directors from the Oncology, Psychiatry, Counseling, Hospice Care and Physical Therapy Department will largely design and approve the evaluation tools. The horticultural therapy consultants can also show them evaluation models from other hospitals if they need ideas.

Type of Assessment	Project Outcome to Evaluate	Evaluation Method	Frequency of Evaluation and Evaluation topics	Evaluator	*Examples
Patient Assessments	Activities facilitate patient's personal treatment goals*. Depending on their condition, patients are given opportunities to participate in activities to address physical, cognitive, affective, psychomotor, and psychosocial functioning.	Structured Interview with numerical rating system	Weekly and/or Monthly depending on the doctors and specialists' monitoring schedule.	Horticultural therapy staff interview patients	Physical therapy patient treatment goals may include: Increases in outdoor physical exercise; Increases in strength and endurance; Use of weak extremities increase; Facial and verbal communication improve; Balance and coordination improve.
		Pre-program and bi-weekly Medical Physical assessments	Pre- and bi-weekly. Evaluation of progress is ongoing and goals and objectives are adjusted as needed.	Horticultural therapy staff evaluate patients	Psychiatric patient treatment goals may include: Exhibits less anxiety; Self-esteem and confidence improves; Participates in opportunities for self expression; Increases motor behavior; Improves in social skills within group activities; Copes well with success and failure
		Self Assessment via Patient Journal	Weekly or Monthly depending on patient's physical and mental capacities. Journals can be written, completed through online platform or recorded through an audio recording app-whichever is more accessible	Horticultural therapy staff administer journal prompts. Patient reports back any notable entries	
	Goal-oriented treatment services includes modifications* to address specific physical, emotional, and/or mental conditions.	Pre and Post Survey via phone, in person or online	Monthly. Patients are asked if modifications are adequate. They are also asked suggestions for improvement.	Horticultural Therapy Staff	Example of Evaluation questions for modified equipment and garden features: Do patient with limited mobility respond to adaptive garden tool such as trowels with longer handles, lightweight

		Behavioral Observational and mapping	Monthly. Patients's movements are observed and mapped by staff to make sure equipment, garden design, and activities are free of any obstacles and the patients are able to fully participate in the horticultural activities. Observations monitor if the garden successfully accomodates the patient's conditions.	Horticultural therapy staff. They contact Garden Design staff if garden construction adjustments are needed.	plastic tools, tools with foam grips and assistive straps? Do patients use raised beds that accomodate wheelchairs and other assistive devices? Are garden path widths and surfaces accessible to all types of assistive devices? Overall, does the garden and its equipment maximize functional independence and patient participation?
Programming Staff and Horticultural Therapy Staff Assessments	Horticultural therapy programs' goals and objectives are stated in observable, behavioral, or measurable terms to permit assessment of participant's progress.	Program performance questionnaires	Monthly. Programming staff report back and share if their treatment goals are still relevant. They also report if patients' indicators of treatment success are appropriate or need adjustment	Horticultural Therapy Staff, Specialists, Program directors	
	The intervention plan is reviewed at set time intervals to evaluate and modify the plan as necessary to meet participant's overall clinical, vocational, or therapeutic goals.	Group discussions	Bi-Weekly. Horticultural therapy staff meet with patient's specialists during to evaluate patient's treatment progress. They also discuss program expectations and evaluate patient's overall response to horticultural therapy	Horticultural Therapy staff	
		Written Reports	Weekly. Reports are filed in patient's charts. Comments may note patient engagement or emotional, cognitive, sensory, motor, and functional improvements. Notes may show increased social participation or notable differences in results from patients' physical examinations.	Horticultural Therapy staff	
Volunteer Assessments	Volunteers are satisfied with volunteer duties and volunteer management.	Likert Scale Surveys	Monthly or Pre and Post Volunteer commitment. Frequency depends on the length of volunteer commitment. Questionnaire topics evaluate the quality of volunteer satisfaction, volunteer management, satisfaction with volunteer training, and intention to continue volunteering.	Volunteer management staff evaluate	Survey Question example: I feel good about my assigned task during volunteering. (Strongly Agree, Agree, Disagree, Somewhat Agree)
	Volunteers are celebrated and rewarded for their therapeutic program impact	Volunteer Recognition Party	Monthly. During the recognition party, there can be an informal evaluation exercises.* The majority of the party celebrates the impact volunteers had on the horticultural therapy program's success and garden operations.	Volunteer management staff	Informal exercise example: At the party entrance, volunteers will see a stack of post-its, markers, a fishbowl and a poster. In the fishbowl people are asked to put any ideas and suggestions to improve the volunteer program. On a poster, volunteers can write their best memory volunteering in the hospital garden.
	Specialized volunteers such as Medical Interns and Medical Students can confidently assist Horticultural Therapists in patient care.	Pre and Post Internship Surveys	Monthly. These surveys evaluate their horticultural therapy technique and patient care.	Horticultural Therapy Staff	

*Module Four
Evaluation &
Assessment*

Assignment 4.2: Build Your GBL Toolbox

(Final Portfolio)

Draft a list of lessons, activities and materials that you plan on using.

Desired short and long-term outcomes you hope participants will achieve as a result of these activities.

Instructions: Think about some of the short and long-term outcomes from your logic model, and select three to five different activities or lesson plans that will lead to these outcomes

I chose three lesson plans from The Nature Conservancy that might be a good fit for both adults and students and tie directly to the [short and long term](#) outcomes for the proposed community garden.

Short and Long Term Outcomes:

1. Increased awareness of gardening benefits
 - Lesson: [Habitat and Pollinators](#)
 - High Level Outcomes:
 - Environmental Learning: Investigating the ecological benefits of gardens.
 - Community Engagement: Planning and hosting an outreach event to share gardening knowledge and resources.
 - Data Collection & Analysis: Measuring the impact of the event to assess community involvement and benefits.
 - Problem-Solving & Action: Developing and implementing a campaign to address a local gardening, sustainability, or food access issue.
2. Increased confidence in gardening skills
 - Lessons: [Community gardening as a system](#)
 - High Level Outcomes:
 - Exploring how gardens provide habitat, filter water, improve soil, reduce carbon footprints, and foster community connections.
 - Organizing a garden-based outreach event to share knowledge and resources with the community.
 - Gathering and analyzing data to measure the event's impact.
 - Developing and implementing a campaign to solve a local issue related to gardening, sustainability, or food access.
3. Successful garden yield and shared produce
 - [Soil](#)
 - High Level Outcomes:
 - Soil Analysis: Students conduct tests to determine soil texture and fertility.
 - Understanding Soil's Role: Exploring how soil filters water, supports biodiversity, and contributes to a sustainable garden.
 - Hands-On Learning: Performing soil sampling activities to evaluate garden health.
 - Practical Applications: Identifying soil deficiencies and learning about amendments to improve soil quality.

4.2 Building Your GBL Toolbox

Possible lessons

Seed to Salad – we can begin this after school in a couple weeks and continue until the end of July

Lessons about photosynthesis – the inputs and outputs

Lessons about climate change

Lessons about geochemical cycles such as the phosphorous cycle, the carbon cycle, the nitrogen cycle

Art ? Plant dyes?, making sachets

Materials

- Seeds
- Compost
- Topsoil
- Garden tools (we have these)
- Spinach for chlorophyll activity
- Morter and pestle
- Radishes for photosynthesis biomass activity
- Water access

Desired Outcomes

- Develop basic understanding of photosynthesis
- Develop basic understanding of photosynthesis
- Develop a basic understanding of geochemical cycles
- Learn about chlorophyll and other pigments
- Learn how to grow vegetables well enough to do it again independently

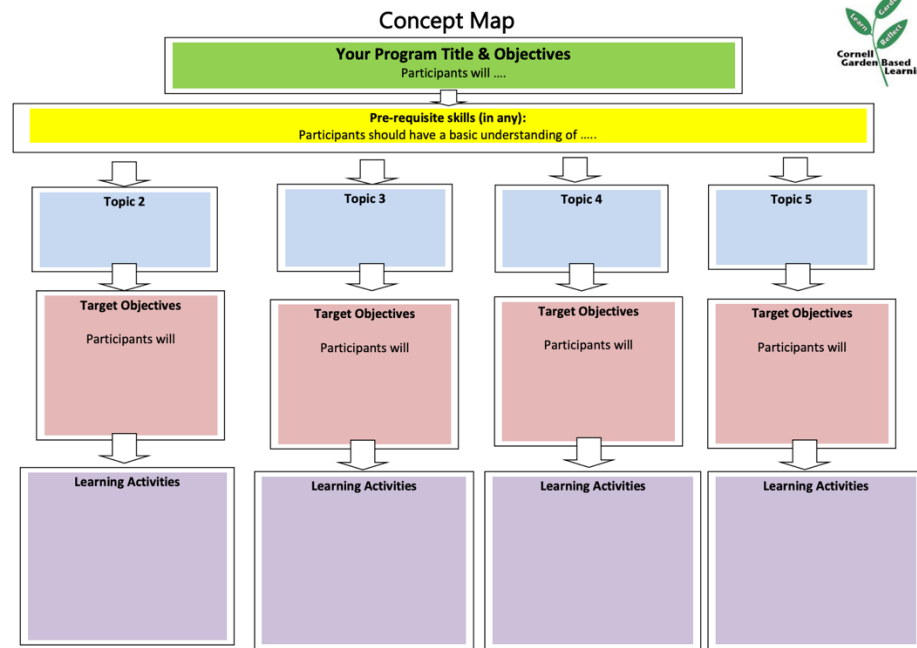
GBL Activity List

Outcomes: Teachers will integrate the garden into everyday learning activities/Students, teachers, and parents will feel more connected through their work in the garden/Students will gain an understanding of how plants grow through the seasons

Description	Link
Cultivating Plant Observation Skills: Create secret bags of plant materials for participants to explore with all their senses to practice observations	https://gardening.cals.cornell.edu/files/activity-observing-plant-characteristics-v98d3i.pdf
Forcing Twigs: Discover how spring flowering trees and shrubs can be forced into bloom after they have completed their winter dormancy requirement.	https://gardening.cals.cornell.edu/files/newlogoforcing-twigs-1jdknrc-1j3zesv.pdf
Explore season extension- find out ways to get an early start with spring vegetables or extend the season of your fall garden.	https://gardening.cals.cornell.edu/files/newlogoExtending-the-Season-1zc6nw01-ud7xmv.pdf
Designing Quilt Block Salad Gardens: Add an art element by creating patterns out of the vegetables and plants you're growing	https://gardening.cals.cornell.edu/files/newlogoS2S-Designing-quilt-block-salad-gardens-uft380.pdf
Planning a Salad Party: Have a celebration at harvest time	https://gardening.cals.cornell.edu/files/newlogoS2S-Salad-Party-1zzkelw.pdf
The Humble Potato, Underground Gold: Help children explore a food crop through the lense of science and history through several activities	https://gardening.cals.cornell.edu/files/Humble-Potato-Underground-Gold-1uuocs0.pdf

Project	Activity	Activity Details	Materials and Garden Features	Associated Outcomes
Youth Garden in California	Mural and outdoor Garden Art	This activity will supplement existing art-based civic engagement activities. Youth groups will be asked to plan and create a mural for the back wall of the garden. They can create 3 or more different murals if they want to cover different environmental themes. The murals can be painted on large, removable, tarpaulin surfaces. The tarpaulins can be fastened to the back wall of the garden. This will allow them to have change mural backgrounds instead of repainting wall surfaces. The environmental themes can be related to their current or future environmental campaigns. The youth group can decide when to display each mural. They will also coordinate and decide if they want to create an educational presentation or public unveiling with each mural. This can be publicized in person or over social media. This activity can be adapted into group sculpture activities as well	Paints, art supplies, tarpaulins, heavy duty mounting/ fastening equipment.	During these activities, youth leaders and volunteers will create original artwork commemorating environmental resources that want to protect in their community. This artwork be used to display their commitment to environmental justice and community health. They will also practice environmental literacy skills, community engagement, group leadership, coordination, artistic expression, public speaking, and presentation skills.
	Medicinal and Culinary Herb Gardens	This activity will supplement their existing garden cooking events. Youth garden leaders and volunteers will have the option to participate in an herb growing workshop. During the workshop, they will learn how to grow medicinal and culinary herbs native to their part of California. They will also learn how to grow culinary herbs used in the Philippines that can grow in California. During these activities, they will start and maintain herb beds. They can also plan future cooking events showcasing the herbs. In the events, they can share recipes that incorporate fresh herbs from the garden and dried herbs/ spices from local Filipino grocery stores. These workshops will also allow them to learn new recipes and share food memories. The workshop teachers will be knowledgeable horticulture, Philippine cooking and herbs.	Herb seedlings, seeds, raised bed soil and amendments, workshop experts	During these activities, youth leaders and volunteers will practice herb cultivation and event planning. They will also build community through sharing memories, building new skills and cooking for each other.
	Garden Maintenance Upgrade	This activity will supplement the volunteer's existing garden management routine. On a bi-monthly basis, the garden management volunteers can attend a series of workshops from Master Gardeners. The workshops can be in the youth garden or in Master Gardeners' outdoor venue. Experts can visit the youth garden to provide input as well. During the workshops or site visit, the volunteers can review garden skills and ask experts for solutions to particular challenges they face in the garden. They can also use this time to scout for an affordable professional groundskeeper that can maintain the garden when volunteers and office staff are unavailable.	Workshop study like notebooks and writing tools	During these activities, youth leaders and volunteers can build a stronger relationship with community gardening experts and extension services. They can upgrade and improve the efficiency of their garden skills. They can also use the workshops to network and find a professional groundskeeper.

4.3 Curriculum or Concept Map



Author: Donna Alese Cooke, 2024

Curriculum Mapping Template

The garden should not be an "add on" or one more thing on your plate. Instead, it integrates all that you are teaching to maximize learning for students, to bring the curriculum to life, and to make your job a little bit easier. Use this template as a way to look, at a glance, at the curriculum and some ways in which garden-based learning integrates with all that you are teaching. We suggest you start small — that is, take one unit or set of lessons, and consider how this integrates with the garden.

The Big Idea What should students know, understand, be able to do?	Content Connections to learning standards, curriculum objectives, etc.	Processes/Activities Lessons, hands-on activities, other experiences in and around the garden.	Processes/Activities Lessons, hands-on activities, other experiences in and around the garden.	Assessment Evidence of learning, opportunities for reflection for teacher and students.	Other, such as timeline, special considerations...
Science					
Math					
Language Arts					
Social Studies					

Concept Map



Habitat and Pollinators

Participants will learn about a garden as an ecosystem by studying the interconnectedness of soil, water, habitat, food, and the pollinators.

Pre-requisite skills (in any):

Participants should have a basic understanding of

Topic 1

Soil

Target Objectives

Participants will learn about:

1. Nutrient Recycling
2. Microorganisms & Decomposers
3. Soil health

Learning Activities

1. Learn about composting, proper temperate, and ratio
2. Help turn and take the temperature of compost piles
3. Apply finished compost to bed for new pollinator garden

Topic 2

Water

Target Objectives

Participants will learn about:

1. Rainwater collection
2. Creating pollinator friendly water sources

Learning Activities

1. Discuss different types of rainwater collection and pollinator friendly water sources (shallow dishes and ponds)
2. Install rain barrels for future use

Topic 3

Habitat and Food

Target Objectives

Participants will learn about:

1. Biodiversity among a garden
2. Native vs. non-native pollinators
3. Design pollinator garden

Learning Activities

1. Discuss diversity needed in a garden/space to encourage a healthy ecosystem
2. Discussion around native vs non-native plants common to the region
3. Draw up a sample pollinator garden focusing on native plants

Topic 4

Pollinators and Animals

Target Objectives

Participants will learn about:

1. Types of pollinators (bees, bats, birds, beetles, etc)
2. Threats to pollinators
3. Plant pollination process

Learning Activities

1. Living organism count found in garden- type and number observed
2. Use different tools to help pollinate flowers

Horticultural Therapy Programs Hospital Garden (Cebu, Philippines)

Mission: The hospital's Horticultural Therapy programs are novel, individualized treatment options will improve recovery rates, increase patient satisfaction, and upgrade standard care in the Psychiatric, Physical Therapy, Rehabilitation, Oncology, and Hospice Care departments

Pre-requisite skills:

All horticulture therapy programs accept eligible patients recommended by their doctors and specialists. Based on their medical assessments, patients must fulfill specific physical and mental criteria to join their department's respective therapy programs. For instance, acute psychiatric patients must be non-violent, demonstrate an ability to follow directions, cope with physical tasks, and show an interest in horticultural activities. Physical therapy patients must be capable of carrying lightweight tools.

Weekly Gardening with Acute Psychiatric Patients

Patients are taught new horticultural skills. As they participate in group horticultural activities, they will build coping skills and improve social skills. They may also develop self-efficacy, confidence and self-esteem. They also have the opportunities for creative self-expression.

Learning Activities

Patients can choose the following tasks:

- Taking care of native plant seedlings,
- Seeding flowers and shrubs
- Potting up mature seedlings,
- Cultivating container gardens and weeding.
- Creating flower arrangements and small container gardens with a mix of different floral seedlings

Patients are encouraged to socialize and cooperate as they complete their group tasks.

Restore & Reflect with Cancer Patients

Patients are taught garden-based meditation, relaxation, and breathing techniques to manage anxiety, feelings of isolation and emotional distress. These are common conditions associated with new cancer diagnosis and cancer therapies.

Learning Activities

Patients can choose the following activities:

- Use instructional pamphlets or audio recordings to individually mediate in a private area of the garden. Pamphlets have map of private and group meditation areas.
- Sit, quietly observe, and freely walk through gardens with a visitor.
- Follow an outdoor meditation session lead by a horticultural therapist
- Complete a walking meditation exercise from the pamphlet or audio recording.

Garden Exercise for Physical Therapy Patients

Patients are taught specific outdoor physical therapy (PT) techniques and gardening skills to support their standard PT program. Activities will increase muscle activity, increase joint flexibility, increase exercise frequency, increase strength and stamina, improve motor skills, increase circulation

Learning Activities

Patients are assigned specific outdoor PT activities with varying levels of assistance. Activities include:

- Low-impact and walking exercises on trail loops
- Lily and ginger flower gardening
- Irrigating fragrant flower gardens,
- Soil preparation, and
- maintaining raised beds.

Horticultural Therapy Staff will instruct, assist and monitor patients. This can be a group or individual patient activity.

Garden Journaling for Talk Therapy/ Group Counseling Patients

Patients receiving counseling for mental health, substance abuse, grief, and family counseling are participate in semi-structured nature journaling activities. During these activities, patients will have an opportunity to increase self-expression, decrease stress and write about coping skills taught in indoor counseling sessions.

Learning Activities

Patients are given specific journal prompts in the garden. The prompts are tailored to their condition and counseling goals.

- Patients can intermittently rest or walk through the garden as they journal.
- Prompts may also encourage patients to write how they plan to demonstrate the new coping skills they learned in the day's indoor session.
- Journal entries can be poetry, drawings, or brief personal comments/notes
- If the patient is from a group counselling program, horticultural therapists can facilitate group shares so patients can express journal entries.

Curriculum Map

The garden should not be an “add on” or one more thing on your plate. Instead, it integrates all that you are teaching to maximize learning for students, to bring the curriculum to life, and to make your job a little bit easier. Use this template as a way to look, at a glance, at the curriculum and some ways in which garden-based learning integrates with all that you are teaching. We suggest you start small — that is, take one unit or set of lessons, and consider how this integrates with the garden.

The Big Idea What should students know, understand, be able to do?	Content Connections to learning standards, curriculum objectives, etc.	Processes/Activities Lessons, hands-on activities, other experiences in and around the garden.	Processes/Activities Lessons, hands-on activities, other experiences in and around the garden.	Assessment Evidence of learning, opportunities for reflection for teacher and students.	Other, such as timeline, special considerations...
How to start a garden	<ul style="list-style-type: none"> > Consider environment where garden is located > What do plants need? >What resources does the garden need to thrive 	<ul style="list-style-type: none"> > pre-test > seed germination > effects of fertilizer > explore garden invertebrates 	<ul style="list-style-type: none"> >plant garden > water/fertilize > weed > harvest 	<ul style="list-style-type: none"> > post-test > quantity of harvest 	This is being undertaken by after school enrichment students and supplemented by 4 week summer enrichment students
Transformation and Transfer of Energy	<ul style="list-style-type: none"> > Biochemical steps of photosynthesis > Cellular respiration > Decomposition > Cycling of matter > Food webs & chains 	<ul style="list-style-type: none"> > make compost > worm bin > barf bag lab (fermentation vs aerobic respiration) 	<ul style="list-style-type: none"> > food chain activity > food web activity (mobiles?) > trophic levels activity 	mini formative assessment built into activity such as Kahoot food web mobile	This is a summer enrichment topic; unit in the 4 week program
Geochemical Cycles	<ul style="list-style-type: none"> > Carbon Cycle > Nitrogen Cycle > Phosphorous Cycle > Water cycle 	<ul style="list-style-type: none"> > What is your phosphorous footprint? > Phosphorous Fact or Fiction Activity > Water cycle: rain gauge or terrarium 	<ul style="list-style-type: none"> > diagram the cycle of a tomato - production, transportation and consumption > test for plant-available soil nitrogen; learn how to adjust nitrogen level 	mini formative assessment such as white board Q & A	This is a summer enrichment topic; unit in the 4 week program
Using Pigments and Produce	<ul style="list-style-type: none"> > What pigments are in plants? > What can you do with the pigments? > What can we make with our harvest? 	<ul style="list-style-type: none"> > color with chlorophyll > leaf chromatography > explore red plant pigment differences > cooking with veggies 		art made with plant pigments	



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

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Science	Learn about the plant family (Solanaceae or Nightshade) that potatoes belong to and compare to the Poaceae family	Select several varieties of potatoes at the store and study their different parts	Examine their details with a magnifying glass and fill in the chart, noting their similarities and differences	Make drawings of one plant and label different parts	
Math	Learn to collect data and create a graph or chart to show results	Search through several seed catalogs and make notes about the different types of potatoes that are available for purchase	Work together to make a graph showing which potato varieties are the most common to find for sale	Answer journal questions (which potatoes would you choose to purchase? Why do you think some are more common than others?)	
Language Arts	Learn about the Native American tradition of a planting day celebration	Read the fictional story of “Chikacha” and her village’s customs and traditions	Make your own version of a Pre-Columbian Andes digging stick with twine and sticks to use for planting	Write your own story about a special planting day celebration that you could plan and what it would include	
Social Studies	Study the history of the potato’s origins, tracing back to the 1300s in South America	Read story of origins, including process of making “chunos”	Try freezing potatoes from the store, thawing and pressing out water to replicate “chunos”	Write out a recipe card for the “chunos” and include a picture of your own experiment.	



A young girl with dark hair is smiling warmly at the camera. She is holding a large, bright yellow flower in front of her. The background is a soft-focus outdoor setting with green foliage. The text "Questions?" is overlaid on the left side of the image in a white, cursive font. A thin white horizontal line is positioned below the text.

Questions?
