ANTIOCH UNIVERSITY
NEW ENGLAND

community garden connections

Horticulture Therapy Workbook

Discovering new ways to enrich nature and garden activities for people of all ages and abilities.

Created by Michelle Stewart

Acknowledgements

This workbook was created in connection with Community Garden Connections (CGC). It was designed to serve as a reference about horticulture therapy and as a guide through the process of creating successful horticulture therapy activities and programs. This workbook is to be used by CGC, CGC sites, Antioch University New England students, community partners, and other interested individuals.

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What is Horticulture Therapy?

Horticulture therapy is the use of plants and the natural world to improve the social, spiritual, physical, mental, and emotional well-being of individuals who participate in it.

There are three types of horticulture therapy programs: vocational, therapeutic, and social.

- Vocational programs work to develop skills and characteristics that will lead to employment. Can include rehabilitation as individuals recover from injury, illness, or disability.
- Therapeutic programs are designed to assist with recovery with the goal of wholeness and healing.
- Social programs are focused on gardening as a leisure activity that supports general well-being.[1]

Horticulture therapy can take place in many different settings, both indoors and outdoors. From digging in a garden, to sitting on a bench in a park, to working with potted indoor plants, to walking in the woods, to doing activities with a licensed horticultural therapist, and many more.

It can also be adapted to many different people and their needs and abilities. Horticulture therapy can be an individual activity or a collaborative group event.

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www.healinglandscapes.org

[1] Haller, R. (1998).

Who Benefits from Horticulture Therapy?

We all benefit! Horticulture therapy can be used with any audience, no matter their age, knowledge, physical or mental ability.

Gardening and spending time outside can have many positive benefits for our mental, physical, social, and emotional health. Outdoor activities can improve mood; lessen depression, anxiety, loneliness, and stress; increase self-esteem; speed disease or illness recovery; and promote a sense of community and connectedness.

Horticulture therapy is a flexible practice that can take place in any setting that involves plants or nature. It can be anything from a private meditation, to working in a garden with family or community members, to a class project for youth, to a group activity at a retirement facility.

While we all benefit from exposure to nature, there are certain groups who can especially grow and thrive when using horticulture therapy techniques:

- Those with ADD/ADHD
- Those with autism
- Those who are physically or mentally disabled
- Those with major or minor health issues
    - Includes cancer, stroke, brain injury, amputation, Alzheimer's and dementia, surgery of any kind, and more.
- Those with mental health and/or stress issues
- Those who are at-risk and/or in juvenile detention
- Those who are prisoners or on parole
- Those who have experienced abuse
- Those who are refugees
- Those with addiction or those who are in addiction recovery
- Those who are veterans of war (PTSD, trouble adjusting, etc.)
- Those with arthritis and/or other physical ailments of aging

How to use Horticulture Therapy

Horticulture therapy (HT) techniques are employed to assist participants to learn new skills or regain those that are lost. HT helps improve memory, cognitive abilities, task initiation, language skills, and socialization. In physical rehabilitation, horticulture therapy can help strengthen muscles and improve coordination, balance, and endurance. In vocational HT settings, people learn to work independently, problem solve, and follow directions.
–American Horticulture Therapy Association

Horticulture therapy can be used to learn social, vocational, and life skills; teach math, science, art, etc.; improve or regain physical abilities; work off excess energy; communicate emotions; share stories and knowledge; provide privacy and escape; and make connections. And that's just the beginning!

It can be active (physical activity and/or changing surroundings) or passive (less physical activity and/or not changing surroundings); designed to fit the ability and needs of the participant. Active activities include gardening, running/walking, etc., while passive activities include sitting on a bench, drawing, meditating, etc. It can also be an individual activity or a group undertaking—the possibilities are endless.

The main benefits of horticulture therapy are as follows: Nurturing; connecting; grounding; imparting purpose and ownership; physical and mental health; skill building; reflection; and providing distraction, privacy, escape, and security.

Discover the benefit that you or the participant wants to receive and use the therapeutic space to design an appropriate plan and/or activity that will help you or them succeed (for more information see pages 5-7).

Especially consider how to use nature and its processes to your advantage. Ideas like change, patience, planning, attention, direction, hope, potential, and even death are all connected to nature and gardening, and can be used to have important discussions with people of all ages.

See Appendix I for specific mental health connections.

How to Create a Horticulture Therapy Program

The following section delves into the process of creating a horticulture therapy program. It will be written from the perspective of an individual trying to help someone else capture the benefits of nature, however, these ideas can also be used on a personal or peer support basis as well (see next section on Peer Support). You can easily use these steps to set goals, make a plan, and create activities as a group or for your own personal benefit as well.

Anyone can lead horticulture therapy activities, just use these basic guidelines![2]

1. **Learn about the participant.** While you do not have to be a certified horticulture therapist, it is often easier if you are knowledgeable not only about the participant's illness, issue, and/or disability, but also about the participant as an individual. This will make developing activities and adaptations that are appropriate and accessible for the user much easier, and it will improve your chance of success.

   If you aren't as knowledgeable about these topics, seek guidance from others who would know the participant and create a treatment team. For example, members of the treatment team could include doctors, caregivers, therapists, family members, social workers, and even the client.

For example:

Name: Jane Smith
Age: 18
Area to work on: Recover from recent knee surgery, improve depressive symptoms
Treatment Team: Jane, Dr. Blake (Jane's primary care doctor), Dr. John (Jane's physical therapist), Dr. Stark (Jane's therapist), and Jane's parents.
Hobbies: Sports, watching movies, and drawing
Dislikes: Spiders and cooking

[2] Adapted from Haller, R.L. & Kramer, C.L. (2006).

2. **Create treatment goals.** Once you have learned about the participant and her/his areas to improve you should work with them to set specific goals to address these topics. Goals are generally long-term and are focused on achieving something through multiple steps (ex: Successfully eat a meal without assistance; obtaining employment; managing stress effectively at work, etc.). Use the idea of SMART goals to make Specific, Measurable, Attainable, Realistic, and Time-bound goals.

    - Primary goal areas:
        - Physical: improve fine motor skills, gross motor skills, standing/balance and endurance, mobility, range of motion, and strength
        - Cognitive: speech and vocabulary, memory, learn new skills, sequencing, follow directions, problem solving, and attention to tasks
        - Emotional: improve self-esteem, safety, control, care, reduce anger and aggression, lower stress, improve outlook on life, and increase spiritual connection
        - Sensory stimulation: connects to cognitive and emotional goals—oftentimes the senses will awaken memories or experiences
        - Interpersonal/Social: enhance family visits, increase connection and conversation with others, share experiences and memories, and cooperate with others
        - Community integration: Increase involvement in community groups or clubs, and discover job opportunities

3. **Using the treatment goals, create an action plan**. Include detailed objectives or short-term goals, actions to be taken, and plans for how to measure outcomes (See Appendix A and B).
    - Components of an action plan
        - Objective: A precisely worded statement of what is to be achieved within a short timeframe
        - Methods: Who will do what, how, under what circumstances, where, when, and how often; includes what the therapist will do, the strategies for intervention
        - Criteria: Quantifies achievement of objective, i.e. how much, how many, how often, how well

- Documentation: Outlines who will measure, what will be measured, how often, and where or how it is recorded

4. **Develop activities and/or therapy sessions**. Consider the participant and her/his goals and objectives—what do they want to achieve? What are their limitations? Strengths? How can a garden, plants, or an outdoor space help? (For activity ideas see pages 11-25 and Appendix F)
   - Create an activity that is age and ability appropriate for the participant—they should leave feeling positive about their progress and accomplishments
   - Activities that require minimal intervention or support by the therapist and maximize independence of the client are the most effective
   - Also, consider available resources. How much time, money, space, and staff do you have to work with?

5. **Lead activities and/or therapy sessions**. Follow the activity plan you created for the participant and document outcomes (See Appendix C).
   - Adapt or modify the activity if it is too much of a challenge. Consider changing the length of time, difficulty, or demands.

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Peer Support and Horticulture Therapy

Peer support is a system of giving and receiving help founded on key principles of respect, shared responsibility, and mutual agreement of what is helpful. It is about understanding another's situation empathically through the shared experience of emotional and psychological pain.[3]

This form of recovery and growth is not based on psychiatric models or diagnoses—there is no clinically-trained therapist involved. Instead of an expert-patient relationship there is connection, mutual experience, understanding, and support given and received by others with similar experiences and situations.

The peer support model and be easily connected to horticulture therapy. However, unlike the steps to create a horticulture therapy program above, a horticulture therapy program based on peer support would be created by and for the participants. As a group or individuals participants could loosely follow the steps above to create goals, design an action plan, and develop activities to help them achieve those goals.

In the peer support model, participants would be responsible for seeing their own plan through, but would be supported by the other members of the group. However, some of the activities chosen could be group-based, and participants could tap into the community-building aspects of horticulture therapy to make connections and support one another.

Along with this, a therapeutic outdoor space would be a great setting for peer support to take place. Therapeutic spaces can often provide a calming, serene environment that people can feel comfortable and secure in, even when talking about difficult subjects. Nature and being connected to the earth can often succeed at putting issues and problems into perspective and open the door for new discoveries.

[3] Mead, S. (2003).

Therapeutic Garden Design

Entire books have been written on the ins-and-outs of therapeutic garden design (see References for more information). Follow these general steps to create a garden space that can be used by all.

First, when starting a therapy garden consider your audience and their needs…and then get them involved! Use a participatory design model to ask users what kind of space and features they want. For example, provide pictures of garden images or feature ideas and let people vote on their favorites. You will have a much more successful program if you ask the people who will be using the space what they want and/or need.

Next, depending on the users of the garden space it could also be important to talk to other professionals like doctors, architects, landscape designers, occupational therapists, psychologists, care providers, etc. They can provide valuable insights into the needs and abilities of the participants from a professional point of view.

Then, using their input and/or support, design a space that will work best for all users. Universal Design ensures that an environment will be usable by the widest range of users regardless of age, ability, culture, or preference (Figure 1). Make sure you design for freedom and privacy, but also for safety. Try drawing the garden space from above for a new perspective.

Next, install the natural and physical features decided upon, and if possible make it a participatory event (See Appendix D for feature ideas). Whether participants wanted potted indoor plants, wheelchair accessible raised beds, or an extensive flower garden with walkable paths, get them involved in the building and installation processes.

Finally, get creative! Come up with fun activities that will help participants use the space and gain the skills that they need to succeed in their therapy programs (See pages 11-25 and Appendix F). Don't hesitate to ask participants if they have any ideas for activities!

Seven Principles to Guide Therapeutic Garden Design

1. Equitable use: the garden is appropriate and appealing for all without segregating or stigmatizing others
2. Flexibility in use: the garden is adaptable to a wide range of individual preferences and abilities and provides choices to accommodate them
3. Simple and intuitive use: the garden is self-explanatory; there is not excessive energy required to know who and what to do in the space
4. Perceptible information: The design itself effectively communicated important information regardless of a user's sensory capabilities
5. Tolerance for error: Features of the garden minimize hazards and the possibility of errors. It provides failsafe features
6. Low physical effort: the appropriate level of effort is expended to be in and use the garden
7. Size and space for approach for use: the garden is manageable to be in for all, regardless of body type or mobility status. There are clear lines of sight, reachable components, and adequate space.

Figure 1: Winterbottom, D. & Wagenfeld, A. (2015). *Therapeutic Gardens: Design for healing spaces.* Timber Press, Inc. Portland: Oregon.

Horticulture Therapy Activity Ideas

Most of these activities are universal, however, particular populations that could especially benefit have been noted.

Remember to consider the abilities of the participants when planning activities.

For more ideas see Appendix F

Digging[4]

Population: Youth (Autism, ADD/ADHD)

Aim: Introduce participant to soil; reduce and redirect aggressive and hyper behavior; lower anxiety; reset mood; physical activity; hand-eye coordination.

Tools:

- Shovel or hand trowel
- Digging plot, sand box, or a container of soil or sand

The Activity:

Bring your student to the digging plot and let them pick their digging instrument.*

Encourage the student to start digging in the digging plot, and let them dig however they wish. Be open to the child's digging methods and actions. If s/he wants to lay down, to taste or smell it, let them do it and then ask them what they experienced. Follow their lead. This is all part of learning through play.

Beyond exercise, this is a great activity to start discussing and learning about soil. What does it look like? Feel like? What else can they see? Are they finding rocks? Worms? React positively to all discoveries and encourage the child to show their finds to classmates or family members. This shared experience can build self-esteem and teaches a basic social interaction skill of sharing.

Always start your day in the digging plot. Routine repetition is especially important for children with autism. Use digging as a motivator, not punishment.

*Note: If you are worried about aggressive tendencies, use a garden hand trowel instead of a shovel and never turn your back on the student.

[4] Adapted from Etherington, N. (2012). 30-32.

Planting[5]

Population: All

Aim: Physical activity; dexterity; hand-eye coordination; following directions; flexible thinking; making predictions/considering the future; plant life cycles; hope; growth; connection to the earth; responsibility; teamwork; exploring actions and consequences

Tools:

- Seeds or plants. Consider purchasing large seeds (ex: sunflower, pumpkin) and durable plants (ex: small trees, ornamental grass) depending on age and ability of participants.
- Container/plot for planting. Can be in the ground, in a pot, or in another item like a bucket. Remember to always punch or drill holes in the bottom for drainage.
- Potting soil
- Water and a water bottle or watering can

The Activity:

When planting there is a set sequence:

- Container: Add soil to the container until it is 2/3 full, place the plant in the container on the soil, water plant, add more soil until the plant is properly covered.
- Ground: Dig a hole two times the size of the plant and its roots, place plant in hole, water, fill in hole with dirt or compost.

Demonstrate for participants first. Walk them through the steps you're taking verbally so they understand what you're doing and why. And then let them try! This is a great activity to teach directions and learning sequences. Be positive about what they do.

Let the participants have their own container, own small plot, or have them work together to plant seeds. Label containers or plots with their names so they can watch the seeds' progress. Encourage them to journal along as the plants come up and grow—how does this process connect to their lives?

[5] Adapted from Etherington, N. (2012). 37-38.

Planting Continued

If participants planted in a container you can let them take the pot at the end of the day, or it can be left in the garden. If the plant is in the ground make sure you bring them back to check on its progress regularly.

Follow up about the seeds' progress. Did the plant come up? What does it look like? What will it need to thrive and succeed? If plants don't come up talk about why this could have happened. Discuss optimal growing conditions. Explain that even though we did all we could to provide optimal growing conditions, through either weather, planting depth, etc., our plants did not grow as well as expected. We learn that the consequences of our actions are not always predictable. Accepting change is very hard. We watered the plant every day, so why did it die? Ask what could we do differently next time? Look for a solution together.

*Note: Look at the back of each seed packet for planting instructions. There you will find useful information (ex: how deep to bury the seeds).

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thegardeninspirations.biz

plymouthmag.com

Nature Treasure Hunt[6]

Population: All

Aim: Plant recognition; teamwork; physical activity; communication; seasons; change

Tools:

- Laminated Sheet
- Dry Erase Markers

The Activity:

Go around the grounds and/or garden and take pictures of various plants and features. Using a computer, place the images in 4x4 or 5x5 squares, similar to a bingo card. Make sure that all of the sheets are a little bit different and include different images. Print and laminate.

Encourage participants to find a buddy and have them go on a nature treasure hunt together. Can they find all of the images on their card? What else did they discover along the way?

This activity can be completed at many different times of the year. Simply take pictures during each season and make special seasonal treasure hunt sheets for each season. Have participants discuss why certain plants look different during other times of the year. Why do they change? Can discuss plant life cycles depending on ability and age of participants.

You can also look online for already designed nature scavenger hunts.

[6] Adapted from Etherington, N. (2012).

Guess Who[7]

Population: Youth (Autism, ADD/ADHD)

Aim: Use multiple senses to guess identity; teamwork; asking for help; sharing

Tools:

- Paper bags or tote bags
- Seeds (use larger seeds)
- Plant cuttings (preferably ones with a unique texture or smell)*
- Vegetables

The Activity:

Place the items in the bags before the participants arrive.

Divide participants up into pairs. Give one person the bag and ask them to close their eyes or put on a blindfold (depends on individual comfort). Ask them to take one item out at a time and guess what it is. They can smell, feel, and taste the item.*

If they are having trouble guessing, they can ask their partner for help. The partner can describe the items features (ex: color, shape, etc.), but should not tell their partner the item's name.

After they have guessed correctly they should pass the bag to their partner and the process begins again.

*Note: Make sure that the items you have chosen are all non-toxic and that no one has an allergy to any of the items.

[7] Adapted from Etherington, N. (2012). 69.

The Bean Icebreaker Game[8]

Population: Youth (ADD/ADHD)

Aim: Help participants feel comfortable with each other; reduce aggressive behavior; encourage peer cooperation; reduce pent up energy; creativity

Tools:

- Outside space, preferably fenced*
- Your voice

The Activity:

Introduce the bean game to the participants. Explain that it involves acting out the characteristics of certain beans. Ask the participants to tell you what beans they know. When they come up with answers ask them what characteristic of that bean they would like to act out. For example, there is a Mexican jumping bean, a dwarf bean, a runner bean, a broad bean, etc.

Have the participants run or jog around the space. When you call out the bean name they should stop and act out the characteristics.

Suggested characteristics:

- Mexican jumping bean: jumping
- Dwarf bean: crouching down
- Runner bean: running on the spot
- Broad bean: standing tall and proud and marching on the spot

*Note: Make sure that the ground is cleared of all slippery material before playing.

[8] Adapted from Etherington, N. (2012). 78-79.

Flower Power[9]

Population: Youth

Aim: Creativity; play; teamwork; sharing; interacting with nature

Tools:

- Container
- Potting soil
- A variety of bright and bold plants (ex: sunflowers, lilies, daisies, cacti, Venus fly trap, etc.)
- Small toy characters (ex: small action figures; the toys handed out with burgers, cereal packets, or in chocolate eggs)

The Activity:

Use the popular idea of video games to connect participants to nature. Have them create a virtual world—their own "video" game—using plants!

Provide a variety of plant options, or take a trip to the local plant store and have participants select their own. Help them plant their selected flowers in a container, and encourage them to think of obstacles, bonuses, points, levels, and other game-related ideas for each flower or plant. What name did they choose for their action figure? What are her/his strengths? Weaknesses? What is their game called?

Allow plenty of time for participants to be creative and to play with their invention. They can share their game with others, explain how it works, and then swap games with each other.

[9] Adapted from Etherington, N. (2012). 82-83.

Can You Hear What I Hear?[10]

Population: Youth (ADD/ADHD)

Aim: Improving focus, energy, creativity, and auditory input; following directions; creativity; listening

Tools:

- A place to sit outside
- Paper, crayons, markers, etc.

The Activity:

Have the participant select a place to sit outside that is still in range of your voice and sight.

Explain that you are going to play a listening game and that in order to hear all the sounds of nature we have to sit and observe quietly. Challenge them to try to identify all of the noises they hear.

Have them close their eyes and listen. Is it a blackbird or a blue jay singing? A car or a bus going by?

Let them listen silently for a while and then ask them what they hear—give praise and support for all answers, even if they are incorrect. Encourage them to try again if they mishear.

Pass out paper and pens and ask them to draw what they hear. Have them get into small groups and discuss their drawings and what they heard.

This activity can be done seasonally.

[10] Adapted from Etherington, N. (2012). 84.

Mini Soil/Sand Box[11]

Population: All (ADD/ADHD; autism; mentally disabled; physically disabled; wheelchair bound; stroke)

Aim: To introduce soil or sand; stimulate the senses; exercise hand, arm, foot, and leg muscles; following directions; listening; dexterity

Tools:

- Potting soil or sand
- Large container or deep tray; access to an accessible raised bed

The Activity:

Place the container or tray on the participant's lap. Pour sand or soil into the tray and gently place the participant's hands in the material. Spread their fingers and show them how to squeeze and then grasp the material and dig deeper. If they can do it on their own allow them to explore.

This activity can also be done with participant's feet if using hands is not an option.

This is a multisensory activity that introduces participants to soil and sand and warms up hand and feet muscles. Smelling and touching the materials will stimulate the senses.

You can also place other small items in the material as well such as small block, balls, or toys. Describe an item to the participant and ask her/him to find it only using their sense of touch.

[11] Adapted from Etherington, N. (2012). 116-117.

Support

Population: Youth (at-risk, addiction recovery); Adults (incarcerated, addiction recovery)

Aim: Introduce participants to basic horticulture growing techniques; help them make connections between the plants and their own lives/situations

Tools:

- Container or in-ground plot
- Potting soil
- Seeds (any variety)
- Stick, old silverware, small piece of wood, anything that will provide support
- String

The Activity:

Begin by having participants plant the seeds and tend to them. As the seeds start to sprout talk about the things the plant will need to grow and be successful (water, sun, protection, and support).

When the plant is a little taller you might notice that some start to bend over. Encourage the participants to place a stick or other form of support by the small plant and gently tie it to the support. Leave a few of the plants without support. As the plant continues to grow keep training it up the support system.

Participants will learn that without support many of the plants will fail to grow strong and large enough to produce anything. This idea can be connected to their own lives—they need support in life and recovery, or else they may not succeed. Where can they find support in their own lives? What do they need to be successful?

Bird Feeders

Population: All

Aim: Creativity; learning about birds; connecting with nature; communication; ownership; following directions; dexterity

Tools:

- Pine cones
- Peanut butter
- Plastic knife or spoon
- Seeds or bird seed
- Tray
- String

The Activity:

Encourage participants to pick out a pine cone. Have them take a spoon or knife and put peanut butter onto the pine cone. When they are finished encourage them to roll their creation in the tray of seeds or bird seed.

Either allow them or help them to tie a string to their bird feeder and hang it in a visible location outside.

As the participants observe their bird feeders have them take notes about what kinds of birds they see using them and share with others.

This craft provides an opportunity for participants to have a sense of ownership and pride about their creation. They can observe the activity surrounding it and share their discoveries with others. Participants may like to sit at a window and observe their bird feeder, or this could lead to them wanting to spend more time outside.

Nature Collage or Memory Box

Population: All

Aim: Creativity; sharing; connecting experiences with nature

Tools:

- Collage
    - Paper
    - Glue
    - Nature items
- Memory Box
    - Cardboard shoe box
    - Nature items
- Markers, crayons, colored pencils

The Activity:

This activity can take place in one day, one week, one month, or longer.

Encourage participants to explore the natural areas around them and collect things that they find beautiful, that speak to them, or that represents something that they're going through.

Once their collection time is over have them make a collage with the items they found, or have them keep the items in a memory box. If they made a memory box ask participants to decorate it with drawings of their own creation, paper, or some of the items they found.

When the time to create the collage and memory boxes is over ask participants to share their creations with others. Where did they find their items? Why did they choose them? What do those items mean to them? How do they connect to their experiences and memories?

Floral Arrangements

Population: All

Aim: Creativity; sharing; connecting with others; communication; ownership; individuality; dexterity

Tools:

- Freshly cut flowers or dried flowers
- Vase or other item to hold flowers
- Ribbon

The Activity:

Let participants either select flowers from the garden that they would like for their arrangement, or let them pick from a pre-prepared bunch of dried flowers. Have some examples pre-made and for show on the tables.

Have them sit at tables in small groups and begin creating their arrangements. You could provide information about the basics of flower arranging for those that want to learn specifics, but some may want to play around and have fun. They can also use ribbon to decorate the flowers or vases.

This activity will create community by bringing people together over a common activity. It could also stir memories about similar activities that participants have done in the past, and they may share those experiences with each other or the group.

It also gives them the chance to show their individuality and creativity. Let participants take their creations home or to their rooms for decoration.

Exploring Scents[12]

Population: All

Aim: Learning through our senses; connecting smells with memories; communication; following directions; communication; teamwork

Tools:
Select a variety of scents

- Calming: Lavender and roses
- Invigorating: Peppermint and lemon
- Smells that make us want to taste them: Maple syrup, apple, peanut butter, vanilla, chocolate

The Activity:

This activity can be done individually or in a group to encourage social interaction for a group counselling session (as an ice breaker).

Allow participant to choose which scent to smell. Make a note of what they like and do not like. Can they name the item they are smelling?

Ask them if the smell reminds them of anything, or brings up any memories. If they are comfortable with it you can ask them to share the memory with the group.

Depending on the age and ability of participants, you can then use their favorite scent to make a candle or to cook a recipe incorporating the smell.

[12] Adapted from Etherington, N. (2012). 92.

Appendix A: Action Plan

Name of participant: _____ Date: _____

Area(s) to work on: _____

_____

Treatment goals: _____

_____

Objective (What to achieve): _____

_____

Activity: _____

Methods (Who will do what, how, where, when, and how often):

_____

_____

_____

Criteria (i.e. how much, how many, how often, how well): _____

_____

_____

_____

Documentation (Who will measure, what will be measured, how often, and how):

_____

_____

Treatment team: _____

_____

Other notes: _____

_____

_____

Appendix B: Action Plan Examples

Examples of goals/objectives, activities, and measurements for various horticulture therapy (HT) programs.

Vocational HT Program

Short-term goal/Objective	**HT Activity**	**What to measure**
Client will add prices of sale plants and give correct change with 80% accuracy	Performing cashier job at plant sale	Determine accuracy percentage of several trials

Social and Wellness HT Program

Short-term goal/Objective	**HT Activity**	**What to measure**
Client will identify 2 positive ways to better cope with illness and stressors by end of 3 support group sessions	Creating potpourri using dried flowers, dried fragrant herbs, and spices. Activity leads to a discussion of use of fragrance for relaxation and other care methods	Determine accuracy percentage of several trials

Therapeutic HT Program: Physical Rehabilitation

Short-term goal/Objective	**HT Activity**	**What to measure**
Client will tolerate standing for 30 minutes after 2 sessions	Potting up plant cuttings while standing	Length of standing tolerance time from session to session
Client will show improved hand-eye coordination by improving speed and accuracy of watering task by 50% over 3 sessions	Watering trays of small pots using squirt bottle or watering can	Speed and accuracy of watering task (comparison of several timed trials)

Therapeutic HT Program: Pediatric Health Care

Short-term goal/Objective	**HT Activity**	**What to measure**
Client will identify 2 ways to contribute to own recovery and maintain improved health/wellness after discharge in 3 treatment sessions	Adopting a plant that needs frequent care to experience nurturing another living thing (rather than always being recipient of care), then participating in discussion of best ways to care for plant and self in the future	Client's identification of 2 ways to better care for own health/wellness after discharge from hospital setting

Therapeutic HT Program: Mental Health

Short-term goal/Objective	**HT Activity**	**What to measure**
Client will explore 1-2 healthy and productive leisure pursuits for use post-discharge during 2-3 treatment sessions	Introduction to houseplant varieties and care, and/or development of small container garden to take home	Client's identification of 1-2 leisure pursuits to be used at home post-discharge with detailed information on what, when, how, and where
Client will demonstrate adequate behavioral self-control to complete one 30-minute horticultural task without agitation, aggressive behavior, or verbal outburst	Horticultural tasks such as removing dead leaves and flowers from plants, or potting up offshoots from succulent plants, etc.	Client being able to tolerate 30-minute tasks including staff instructions/redirection without angry verbal outburst or agitated behavior

Therapeutic HT Program: Pain Management

Short-term goal/Objective	**HT Activity**	**What to measure**
Client will demonstrate reduced intensity of pain perception during HT activity by 2 points on pain scape after 2 treatment sessions	Potting up scented geranium cuttings, or cutting roses and separating petals to dry	Change in perceived pain intensity using 1-10 pain scale (comparison of trials)

Therapeutic HT Program: Hospice

Short-term goal/Objective	**HT Activity**	**What to measure**
Client will express sense of peace and closure regarding impending death in one HT treatment session	Discussion of type of tree to be planted to leave legacy for loved ones and discussion of end-of-life issues	Client's verbal expression of readiness for natural death or sense of peace in having closure with loved ones

Therapeutic HT Program: Specialized Dementia

Short-term goal/Objective	**HT Activity**	**What to measure**
Client will demonstrate orientation to self during HT treatment activity after 3 treatment sessions	Care for houseplants brought to unit on cart along with reminiscence discussion of plants, gardening	Client will verbally express a memory of own past gardening experiences or identify two types of plants
Client will follow 2-step directions with verbal cues for 15 minutes in 3 HT treatment sessions	Arranging bouquet of fresh or dried flowers to place in client's room	Client's ability to follow 2-step directions for 15 minutes

Adapted from Haller, R.L. & Kramer, C.L. (2006). *Horticulture therapy methods: Making connections in health care, human service, and community programs.* New York, NY: Haworth Press. 106-112.

Appendix C: Activity Plan

Participant name: _____ Session Date: _____

Program Model Type: _____

Goals: _____

_____

_____

Methods/Activity Summary: _____

_____

_____

_____

Supplies: _____

_____

Procedure: _____

_____

_____

_____

_____

Evaluation Method: _____

_____

_____

_____

Review and Follow-Up Notes: _____

_____

_____

_____

Adapted from Haller, R.L. & Kramer, C.L. (2006). *Horticulture therapy methods: Making connections in health care, human service, and community programs.* New York, NY: Haworth Press. 114.

Appendix D: Therapeutic Garden Features

Layout, Accessibility, and Comfort

- Doors leading outside that are easy to use
- Plants and features varying in height
- Raised garden or flower beds
- Paved walkways that have a low grade, are wide enough for two wheelchairs to pass, and are accessible for all
- Handrails and other supports
- Rocking chairs and/or benches
- Canopies and/or tall trees for shade and relaxation
- Places to enjoy the sun
- Areas for privacy and areas for socializing and community
- Places for play (especially important for youth)
- A clear layout so people don't get confused, lost, or anxious

Visual Effects

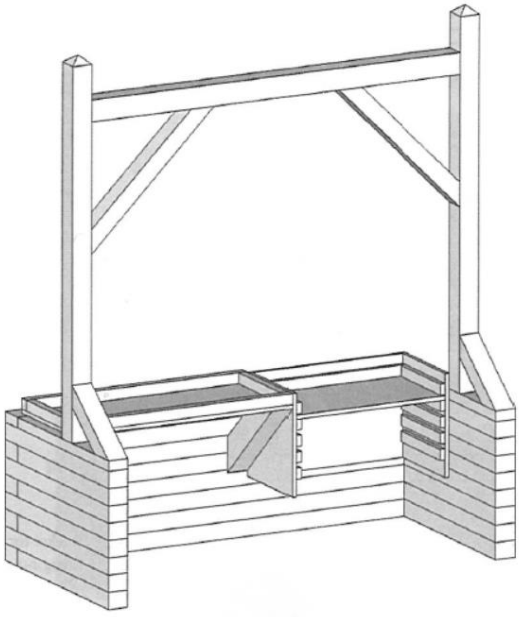
- A range of plant types, native is often best
    - If designed for a specific population try to connect the plants to their experiences and memories (refugees, seniors, etc.)
- Sensory plants (See Appendix G)
    - Strong smells, bright colors, interesting textures, etc.
- Water features
- Bird feeders and bird baths
- Flowering plants to attract butterflies, birds, and other pollinators
- Include signs about plants and other fun facts for people to read and discuss

Tools

- Tools available for all users
    - There are garden tools designed for people in wheelchairs and for those with physical limitations to make gardening fun and easy!

Appendix E: Wheelchair Accessible Garden Beds

Wheelchair accessible beds can come in many shapes and sizes. The most important thing is that they are built high enough so that the participants won't have to reach too far to interact with the plants. There are also models where participants can be wheeled underneath the bed for even better access.



Etherington, N. (2012). p. 106.

www.livingmadeeasy.org.uk

learn.eartheasy.com

www.biodiverseed.com

Appendix F: Other Easy Activities

Applies to all populations

- **Gardening (vegetable and/or flower, indoor and/or outdoor)**
  - Aim: physical health; mental health; community; communication; teamwork; provides meaning and purpose
  - Activities: Preparing garden beds; planting; transplanting; watering; weeding; pruning; harvesting, etc.

- **Cooking**
  - Aim: physical health; communication; teamwork; follow directions; learn a new skill
  - Activities: washing; cutting; mixing; measuring; cooking; cleaning; serving, etc.

- **Sitting on a bench or in a chair outside and listening/watching**
  - Aim: connecting to nature; stress relief; listening skills

- **Sweeping, raking, hoeing**
  - Aim: physical health; provides meaning and purpose

- **Walking/running**
  - Aim: physical health, connect to outdoors, vitamin D, etc.

- **Watering flowers and plants**
  - Aim: physical health; provides meaning and purpose

- **Filling bird feeders**
  - Aim: physical health; provides meaning and purpose

- **Outdoor lawn games (bocce ball, horse shoes, bag toss, etc.)**
  - Aim: physical health; play; community, following directions

- **Drying flowers and herbs**
  - Aim: Learn a new skill, aroma therapy, create gifts for others

- **Journaling**
  - Aim: observation, connect nature to your own life, etc.

- **Garden Club**
  - Aim: community, sharing, physical activity

Appendix G: Sensory Plants

Sunflowers: Have edible seeds, a source of food for birds. They are relatively easy to grow, and usually sturdy. They produce colorful flower heads, and their leaves and buds move to face the sun.

Lamb's Ear: Grows well in partial shade. Leaf texture is white, soft and furry.

Roses: There are many varieties, and they all have a strong, familiar scent. There are varieties without thorns. You can use their petals and flower heads for different activities like making potpourri, drying, and crafting.

Marigolds: They are bright, cheerful, fragrant flowers. Some varieties are edible. Their scent deters pests. Easy to dry and harvest seeds.

Snapdragons: Have beautiful flowers in many different colors. Fun and whimsical to play with. Squeeze the flowers to make them resemble a dragon snapping its jaws!

Cherry tomatoes: Quick and easy to ripen, sweet to taste, and bite-sized, which is easier for people with sensory sensitivities.

Hyacinth: Strong fragrance. Can collect seeds from dried seed heads. If fragrance is too strong try planting tulips.

Pumpkin: Seeds and pumpkin are edible. Seeds are large and easy to work with. Pumpkins are relatively durable, often with thick skin.

Sweet Peas: Many colors available, pleasant fragrance. The plant climbs, so use a trellis and watch the plants grow! Do not eat plant parts including seeds.

Herbs: Lavender, parsley, santolina, lemon balm, curry plant, basil, lovage, marjoram, oregano, rosemary, bergamot, garlic, dill, thyme, sage, & mint.

Adapted from Etherington, N. (2012). Gardening for children with Autism Spectrum Disorders and special educational needs: Engaging with nature to combat anxiety, promote sensory integration and build social skills. Philadelphia, PA: Jessica Kingsley Publishers. 139-142.

Appendix H: Plants for container gardens

Container Gardening: This form of gardening is perfect for small spaces. You can use any number of materials from buckets, baskets, tires, pallets and more to create a beautiful, mini garden. There are also specific varieties of vegetables that are small and/or produce small fruit, so consider them when starting your container garden.

- Beets: 'Little Ball' or 'Gladiator'
- Broccoli: 'Raab' ('Raab Di Rapa')
- Cabbage: 'Modern Dwarf,' 'Hybrid Salarite' (Savoy type), 'Minicole,' & 'Red Acre' (red)
- Carrots: 'Little finger,' 'Lady finger,' &'Gold Nugget'
- Cauliflower: 'Snowball'
- Corn: 'Honey Cream,' & 'Golden Midget'
- Cucumber: 'Pot luck,' 'Bush Champion,' 'Spacemaster,' & 'Patio Pik'
- Eggplant: 'White egg,' 'Modern Midget,' 'New York Improved,' & 'Early Black Egg'
- Lettuce: 'Little Gem,' & 'Tom Thumb'
- Onions: Most onions, especially scallions, garlic, and shallots. Try 'White Portugal.'
- Peas: 'Mighty Midget,' 'Tiny Tim,' & 'Little Marvel'
- Peppers: Most peppers don't take up a lot of space
- Pumpkin: 'Small Sugar,' 'Spirit,' & 'Cheyenne'
- Radish: All are good
- Squash: Summer: 'Creamy,' 'Hybrid Daytona,' & 'Benning's Green Tint.' Winter: 'Gold Nugget,' 'Table King Bush Acorn,' 'Butterbush,' & 'Sweet Dumpling'
- Tomato: 'Patio,' 'Pixie,' 'Tiny Tim,' 'Small Fry,' & 'Goldie.'*

Damrosch, B. (1988). The garden primer. Workman Publishing: New York pg. 203.

Appendix I: Using Horticulture Therapy for Mental Health

Ideas to help you understand and create activities for individuals with mental health issues

Diagnosis	Possible Issues	Modifications and Adaptations
Major Depression	• Low motivation and energy, no desire to do anything for him/herself	• Pot plant(s) to give to family member
	• Neglect of hygiene and grooming, lack of appetite, unhealthy level of sleep	• Use caring for plants as a metaphor for caring for self—what do each need to survive and thrive?
	• Low self-esteem	• Use plant care to gain sense of accomplishment
	• Safety issue: Suicidal ideation	• Monitor all tools and supplies, use nontoxic plants, use plastic pots instead of terra cotta, use no sharp objects
Bipolar affective disorder	• Rapid and pressured thoughts and speech, and high level of distractibility creates difficulty in listening to and following directions	• Have them repeat directions, then monitor process so they don't skip steps or do steps out of order—provide a simple written list of steps
	• Extreme irritability	• Set clear, fair, consistent limits but stay calm. May need to separate irritable client from peers to prevent arguments
	• Safety issue: Impaired judgement due to grandiosity and impulsivity	• Supervise bipolar clients closely for safety purposes to prevent them from taking inappropriate risks or engaging in risky behavior

Schizophrenia and schizo-affective disorder	• Poor social interaction due to paranoia and other symptoms provides little opportunity to nurture others	• Plants provide a nonthreatening way to connect with another living thing, and an opportunity to nurture. People with schizophrenia often show great patience with repetitive tasks such as weeding, watering, and plant grooming
	• Paranoia regarding unfamiliar people and objects	• Use fragrant herbs to break down barriers. Taste an herb leaf to show that it's safe
	• Disorganized though processing can lead to difficulty following and remembering directions, and to impaired safety judgement	• Work side by side with client and perform one step at a time as they follow your lead. Use the same terminology and steps in the same order every time
	• Hypersensitivity to sensory stimuli which creates overwhelming distractions and restlessness	• Reduce clutter, and limit choices. Use tasks that take small segments of time with chances for breaks to walk for a few moments to relieve restlessness
	• Extreme sensitivity to criticism, negativism, and disrespect	• Use neutral tone of voice, and be aware of own body language—stay positive at all times
Substance dependence and abuse	• Irritability and restlessness due to constant craving for substance	• Redirect attention to pleasurable task such as plant propagation or gardening to help clients learn more healthy ways to create pleasure, and to focus on something besides themselves
	• Low frustration tolerance, impulsivity, and poor problem solving lead to pattern of quitting activities when frustrated	• Plant-care activities provide low-key and nonthreatening ways to focus on problem solving. Ask, "How can we work together to solve this?" when a problem arises. Offer support and information

Substance dependence and abuse continued	• Physical restlessness and anxiety	• Allow frequent breaks or perform horticultural tasks requiring movement, such as gardening tasks
Anxiety Disorders	• Tremendous energy spent on avoiding situations in which they might experience anxiety or panic which they feel very intensely • Extreme physical discomfort from physiological symptoms of anxiety and panic	• Divert attention with horticultural activities that are interesting and self-motivating. Have clients frequently rate their level of emotions on scale of 0-10 to help them learn how to modulate their own feelings • Distract attention from physical symptoms using relaxing effects of plants, nature, and gardening. Teach relaxation techniques using deep breathing and meditative aspect of garden. Fragrant plants may be of special use. Allow client to release anxiety via physical activity
Dementia	• Safety issue: Varying levels of confusion and disorientation • Sort-term memory impairment • Safety issue: Impaired executive functioning and physical restlessness/agitation leads to increased fall risk	• Use nontoxic plants and watch carefully so clients don't ingest plants or soil. Keep watch on tools. • Do activities one step at a time. Use old-fashioned plants to assist in recollection about plants/gardening in clients' youth. Use seasonal plants/activities to assist in orientation. Use multisensory approach. • Make sure clients are seated safely for indoor and outdoor horticultural tasks. Allow pacing/walking in safety enclosed courtyard or use circular garden pathways that return to the building. Use path materials that are not slippery,

Dementia continued	• Safety issue: Impaired executive functioning, impulsivity, and poor judgement can lead to combative and assaultive behavior—often with little or no warning • Short attention span, and low frustration tolerance	especially when wet. Encourage clients to use walkers, canes, and other assistive devices correctly. • Watch where your body is in proximity to client. Don't become trapped in corner. Don't get close enough to be grabbed or hit. Keep hair pulled back so it can't be pulled. Eliminate necklaces and long earrings that can be pulled. • Use plant activities that are simple and provide immediate gratification

Haller, R.L. & Kramer, C.L. (2006). *Horticulture therapy methods: Making connections in health care, human service, and community programs.* New York, NY: Haworth Press. 130-132.

Resources

Garden Design

Marcus, C.C. & Barnes, M. (Eds.) (1999). *Healing gardens: Therapeutic benefits and design recommendations.* New York: NY: John Wiley & Sons, Inc.

Detailed book about designing therapy gardens for hospitals, psychiatric hospitals, children, nursing homes, Alzheimer's patients, and those in hospice. Includes case studies.

Marcus, C.C. & Sachs, N.A. (2014). Therapeutic landscapes: An evidence-based approach to designing healing gardens and restorative outdoor spaces. Hoboken, NJ: John Wiley & Sons, Inc.

Walks readers through design guidelines for healthcare facilities, children's hospitals, cancer patients, the elderly, Alzheimer's and dementia, hospice, mental and behavioral health facilities, veterans and active service members, rehabilitation gardens, and restorative public spaces.

Souter-Brown, G. (2015). *Landscape and urban design for health and well-being: Using healing, sensory and therapeutic gardens*. New York: Routledge.

Discusses the history of therapeutic gardens and the benefits for children, adults, individuals who are disabled, stressed executives, and urban environments.

Winterbottom, D. & Wagenfeld, A. (2015). Therapeutic Gardens: Design for healing spaces. Timber Press, Inc. Portland: Oregon.

Focuses on gardens for movement and physical rehabilitation, gardens for solace and comfort, learning gardens, sensory gardens, and community gardens.

Horticulture Therapy Activities and Programming

Etherington, N. (2012). Gardening for children with Autism Spectrum Disorders and special educational needs: Engaging with nature to combat anxiety, promote sensory integration and build social skills. Philadelphia, PA: Jessica Kingsley Publishers.

Contains great horticulture therapy ideas for children with autism; anxiety, anger and depression; ADHD/ADD; developmental disabilities; and wheelchair users.

Haller, R.L. & Kramer, C.L. (2006). *Horticulture therapy methods: Making connections in health care, human service, and community programs.* New York, NY: Haworth Press.

Walks you step-by-step through the process of designing, preparing, and executing a successful horticulture therapy program.

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Autism	Etherington (2012) Flick (2012) Sachs & Vincenta (2011)
At-risk	Sandel (2004) Twill, Purvis, and Norris (2011)
Adults	
Mental health	Barnhart, Perkins, and Fitzsimmonds (1998) Gonzalez, Hartig, Patil, and Martinsen (2011) Husted (2012) Marcus and Sachs (2014) National Alliance on Mental Health (2016) Pachana (2003) Ulrich, Bogren, and Lundin (2012)
Stress	Coping with stress at work (2015) Eriksson, Karlstrom, Honsson, and Tham (2010) Eriksson, Westerberg & Jonsson (2011) Grahn and Stigsdotter (2010) Page (2008) Stress at work (2014)
Workplace Stress	Elmer (2011) Gurchiek (2009) HighGrove (2015) Ladika (2013) Weinnstein (2014)
Addiction Recovery	Addiction Recovery (2011) Adrian (2015) Enos (2013) Gardening Therapy (2015) Giles (2005) Page (2008)

Incarceration	Bouffard, Mackenzie & Hickman (2000) Clarke (2011) Dempsey (2005) Giles (2005) Hale, Marlowe, Mattson, Nicholson & O'Callaghan, Robinson, Reed & Roof (2010) Lindemuth (2014) Migura, Whittlesey, and Zajicek (1997) Moore (1981) Souter-Brown (2015) Thigpen, Beauclair and Carroll (2011) Ulrich & Madkarni (2009) Wilson, Gallagher & MacKenzie (2000)
War Veterans	Caddick and Smith (2013) Kirk (2010) Marcus and Sachs (2014) National Institute on Drug Abuse (2013) PTSD (2009) Westlund (2014)
Seniors	
Seniors	Austin, Johnston, & Morgan (2006) Brown, Allen, Dwozan, Mercer & Warren (2004) D'Andrea, Batavia, & Sasson (2007) Detweiler et al. (2012) Horticulture Therapy Program (2011) Infantino (2004) Marcus and Sachs (2014) Rodiek (2005) Rodiek and Fried (2005) Tse (2007) Tse (2010) Wakefield, et al. (2007)
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