Root in Nature

# Introduction to Therapeutic Horticulture

## Course Manual

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LESSON 01

# COURSE INTRODUCTION

# Welcome to the Introduction to Therapeutic Horticulture Course

Welcome to the course! I'm Alexis, the CEO and Founder of Root in Nature. Our team is delighted to introduce you to the rewarding field of therapeutic horticulture (TH).

Root in Nature strengthens human health by connecting people with plants and nature through TH, while serving as a training hub and professional growth platform for practitioners in the field.

Throughout this course, we aim to equip you with the foundational knowledge required to understand the practice of therapeutic horticulture, recognize your place within it, and prepare for deeper study should you choose to continue into advanced, practice-based courses.

Your instructors Emilee Weaver and Katie McGillivray, along with several guest speakers, will guide you through the course. At the end of each lesson, you'll be required to pass a quiz to solidify your understanding and unlock the subsequent module. Upon successful completion of the final quiz, you'll receive your certificate of completion and earn the title of Therapeutic Horticulture Ally.

Many of you will already have access to the GrowTH Network as part of your enrolment, where you can connect with peers, use the sortable activity database, join virtual events, participate in monthly calls with a registered horticultural therapist, and explore resources to support your sessions. We hope to see you and supporting your ongoing work there!

**By the end of this course**

We're confident that you'll have acquired a valuable set of tools to enhance your therapeutic approach using the power of plants, gardening, and nature. We appreciate your decision to join us on this learning journey, and we're excited to help launch your exploration into the world of TH.

This course manual is designed to enhance your learning experience, providing a comprehensive guide to our course content and serving as a valuable reference tool throughout your journey. Let’s get started!

# Meet Your Instructors

## Emilee Weaver

My name is Emilee Weaver, and I serve as the Director of Learning and Community Engagement with Root in Nature. This role is a long-held dream, as it allows me to merge my passion for advancing the field of therapeutic horticulture with my commitment to mentoring and uplifting the strengths and voices of those aspiring to be practitioners.

I began my career in professional horticulture more than 25 years ago and merged this foundation with my education in social work and a certificate in horticultural therapy from the Horticultural Therapy Institute.

Over the past 15+ years, I've developed and led programs across diverse clinical and community settings, with a focus on the intersections of TH/HT, mental health, and vocational development. My work has included programs in psychiatric hospitals, elder care communities, farms, and botanical gardens.

Before joining Root in Nature, I served as lead content creator and instructor for a university-based TH certificate program and co-authored one of the first comprehensive textbooks in the field, The Profession and Practice of Horticultural Therapy (2019). Most recently, I've partnered with botanical gardens and clinicians in Ukraine and Armenia to support communities experiencing the trauma of war through therapeutic horticulture training and consultation initiatives.

I'm deeply grateful for the chance to share what I've learned and to support you as you forge your unique path into this meaningful work.

## Katie McGillivray

My name is Katie McGillivray and I am a Registered Horticultural Therapist (HTR) through the Canadian Horticultural Therapy Association (CHTA). I have had the privilege of working in the field of TH with a wide variety of populations since 2014. I completed my Horticultural Therapy certificate with Ann Kent and did my best to build my own degree in Therapeutic Horticulture, complete with courses in horticulture, agriculture, psychology, research and a minor in counselling. Mentorship has also played a huge role in my Therapeutic Horticulture journey, both past and present.

Promoting and advocating for this wonderful profession has always been a priority of mine and I am thrilled to be a part of your journey in TH in this small way.

Our hope is for this course to be accessible as possible for people. We also want you to be comfortable while taking the course. Set yourself up in a spot with minimal interruptions and preferably with a view of nature!

## Tips for making the most of this online learning experience:

- **Seek clarification when needed:** If you have any questions or need clarification on a topic, don't hesitate to reach out to us at **courses@rootinnature.ca** or in the GrowTH Network chat forum. Please reach out at any time if there is anything that we can do to make this course more accessible to you. Closed captions and transcripts are available.
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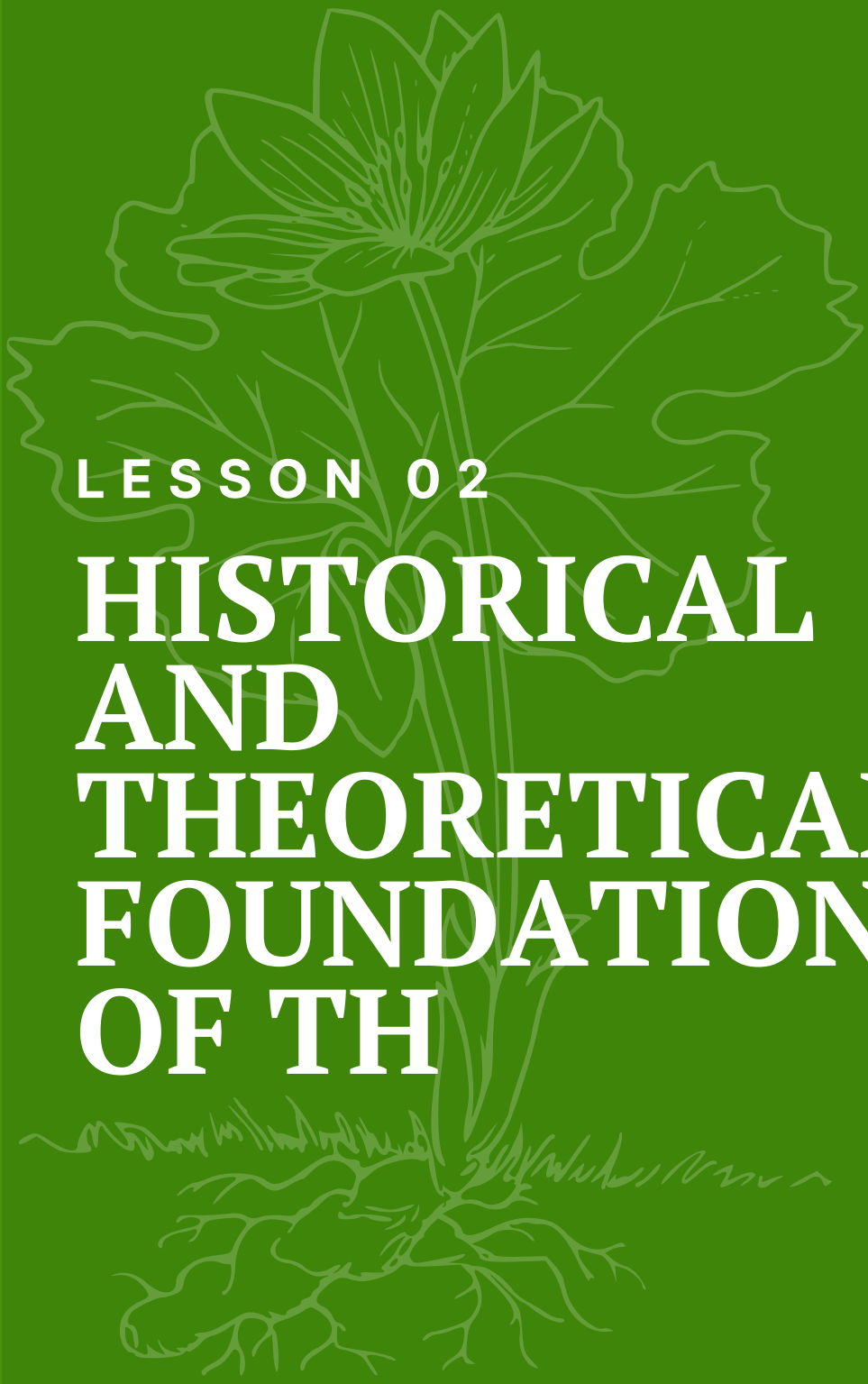
LESSON 02

# HISTORICAL AND THEORETICAL FOUNDATIONS OF TH



# What is Therapeutic Horticulture?

Therapeutic horticulture (TH) is the **facilitated use** of plants and nature-based activities to support individual or group goals related to personal health and well-being. Plants and nature become the medium through which growth, healing, and transformation occur.

**How TH Relates to Allied Health Fields**
TH shares common ground with allied health professions such as recreational, physical, and occupational therapy. All aim to help clients build skills, independence, and overall well-being.

- In physical therapy, structured stretches and exercises serve as the intervention.
- In TH, plants and nature-based activities serve as the intervention—supporting recovery, skill-building, and emotional resilience.

## TH vs. Gardening

While gardening and spending time in nature both offer proven health benefits, TH is distinct because it is:

- Professionally facilitated
- Goal-oriented
- Deliberately structured

Practitioners design activities to meet participant goals, often with measurable outcomes. Gardening, by contrast, is usually self-directed and less structured.

**Evidence-Based Outcomes**

TH is an evidence-based practice shown to support:

- Psychological health
- Physical functioning
- Cognitive skills
- Social connection
- Vocational development
- Spiritual well-being

A unique strength of TH is that a single activity can address multiple goal domains at once, making it highly efficient and cost-effective.

## Populations and Settings

TH is adaptable to nearly any setting:

- Hospitals, schools, correctional facilities, community gardens, and more
- Effective with a wide range of participants, including those recovering from trauma, living with disabilities, managing mental illness, or simply seeking connection and purpose
- Designed to meet people where they are, tailoring activities to diverse strengths, needs, and abilities

### Roles of a TH Practitioner

Practitioners:

- Design or assist in developing therapeutic garden spaces
- Facilitate adaptive, nature-based activities
- Ensure safety of participants and environments
- Provide tools and techniques for inclusive participation
- In some settings, document progress and collaborate with interdisciplinary care teams

### Types of TH Activities

Practitioners create both **passive and active** opportunities for engagement, such as:

- Gardening (vegetables, perennials, annuals)
- Indoor plant care and seed starting
- Greenhouse and nursery work
- Organizing plant sales and markets
- Creating arts, crafts, and plant-based products

Activities may also include:

- Mindfulness practices
- Therapeutic group discussions
- Educational content and routine check-ins

## Conclusion

TH is more than gardening - it is an intentional, structured, and evidence-based practice that uses nature as a powerful medium for healing, growth, and connection. Whether practiced in community, clinical, or vocational settings, it is defined by:

- Clear goals
- Skilled facilitation
- A deep recognition of the human need to connect with the living world

## Timeline: The Modern History of Therapeutic Horticulture (TH) & Horticultural Therapy (HT)

### Ancient Wisdom and Civilizations

- Since the beginning of human existence, plants and nature have been essential to survival, well-being, and healing.
- Indigenous peoples across the globe have long recognized the power of plants for medicine, food, and sustainable cultivation.
- Ancient Egyptians, Greeks, and Romans used gardens for physical, emotional, and spiritual renewal, integrating them into medical and spiritual practices.

### Middle Ages to Renaissance

- Monastic gardens served as sanctuaries for meditation, relaxation, and the cultivation of medicinal plants.
- By the Renaissance, botanic gardens emerged, linking scientific study of plants with therapeutic applications.

### Early 1800s

- Dr. Benjamin Rush, physician and signer of the U.S. Declaration of Independence, advocated for the therapeutic benefits of gardens in treating mental illness.
- Known as the “father of American psychiatry,” his work laid the foundation for integrating horticulture into healthcare.

### 18th & 19th Centuries

- Architects and city planners emphasized how landscapes, building design, and green spaces influenced well-being.
- Early psychiatric hospitals in the U.S. and Europe incorporated gardens, courtyards, and walking paths to support recovery.

**World Wars (1914–1945)**

- Gardening was used to rehabilitate injured soldiers during and after World Wars I and II.
- Activities promoted physical recovery, skill development, emotional healing, and renewed purpose.
- These lessons extended into civilian healthcare, rehabilitation centers, and psychiatric institutions.

**Mid–20th Century: Professional Era Begins**

- 1955 – First Master of Science degree in Horticultural Therapy awarded at Michigan State University.
- 1960 – First horticultural therapy textbook, Therapy through Horticulture by Alice Burlingame and Dr. Donald Watson, published.
- 1973 – Council for Therapy and Rehabilitation through Horticulture formed (later the American Horticultural Therapy Association, 1988).
- 1975 – The Society for Horticultural Therapy founded in the UK (later renamed Thrive).
- 1976 – Dr. Paula Diane Relf earned the first Ph.D. in Horticultural Therapy at the University of Maryland.

**Late 20th Century**


- 1987 – Canadian Horticultural Therapy Association (CHTA) founded.

**21st Century: Global Expansion**

- 2000s – First three formal therapeutic horticulture certificate programs in the U.S. and Canada launched (Root in Nature among them).
- 2008 – Hong Kong Association of Therapeutic Horticulture established.
- 2013 – Taiwan Horticultural Therapy Association formed.
- 2017 – Therapeutic Horticulture Australia founded.

**Present & Future**

- HT and TH continue to expand worldwide.
- Practitioners today carry forward a tradition as old as humanity itself—one that heals, connects, and strengthens communities.

## Modern Theoretical Foundations of TH

The modern practice of therapeutic horticulture is grounded in a number of influential theories that help us understand why plants and nature have such a profound effect on people. These theories highlight the ways our environments shape health, behavior, and development, and they provide a framework for the outcomes we see in practice.

One of the most widely recognized is the **Biophilia Hypothesis**, introduced by biologist and conservationist E.O. Wilson in 1984. Wilson proposed that humans have an innate need to connect with nature and other living things. In therapeutic horticulture, this idea explains why people are often naturally drawn to plants and green spaces, and how this connection can support healing, grounding, and emotional balance.

Another important framework is **Attention Restoration Theory**, developed by environmental psychologists Rachel and Stephen Kaplan in the 1980s. They suggested that natural environments restore mental focus through what they called “soft fascination”—things like rustling leaves, birdsong, or flowing water. These gentle stimuli allow the mind to rest and recharge. In practice, this theory supports the use of gardens and green spaces to reduce burnout, restore concentration, and even benefit conditions such as ADHD or stress-related fatigue.

Closely related is **Stress Reduction Theory**, introduced by healthcare design researcher Roger Ulrich during the same decade. Ulrich demonstrated that even brief exposure to nature —such as looking out a window at trees—can lower stress markers like blood pressure, heart rate, and cortisol. This theory reinforces what many practitioners observe: both passive and active engagement with plants can promote calm and aid in recovery.

Theories of human development also play a role. **Human Development and Life Course Theory**, advanced by Erik Erikson and Glen Elder in the 1970s, emphasizes that growth continues across all stages of life. Development is shaped by events, relationships, and personal choices. Therapeutic horticulture aligns closely with this view, as gardening activities can support milestones, build autonomy, strengthen motor skills, and enhance sensory integration for people of all ages.

From another perspective, **Environmental Psychology**—shaped by the work of Roger Barker and again the Kaplans in the 1960s and 70s—shows us that both natural and built environments influence how we think, feel, and behave. In therapeutic horticulture, this highlights the importance of creating well-designed green spaces that improve well-being, encourage positive behaviors, and foster a sense of place and belonging.

A more recent contribution is **Ecopsychology**, developed by historian and psychologist Theodore Roszak in the 1990s. Roszak argued that mental health and ecological health are deeply interconnected. By fostering a strong connection with nature, therapeutic horticulture not only helps restore emotional balance but can also inspire care for the environment itself.

Learning and group interaction theories are also relevant. **Social Learning Theory** by Albert Bandura and **Group Dynamics Theory** by Kurt Lewin, developed between the 1940s and 60s, show that people learn through observing others, modeling behavior, and interacting within groups. In a gardening context, these dynamics play out naturally—participants gain confidence, learn new skills, and experience social inclusion and teamwork through group horticulture activities.

The field is also informed by **Empowerment Theory**, introduced by Julian Rappaport and expanded by Marc Zimmerman in the 1970s and 80s. This perspective emphasizes that true empowerment arises when systems support inclusion, self-determination, and shared power. Therapeutic horticulture can be a vehicle for empowerment, offering participants real choices, meaningful responsibilities, and opportunities for growth.

Finally, **Sensory Integration Theory**, developed by occupational therapist and neuroscientist Dr. Anna Jean Ayres in the 1970s, helps us understand the role of sensory input in shaping movement, behavior, and emotional regulation. Structured gardening activities can provide rich sensory experiences—touching soil, smelling herbs, listening to water—that support sensory processing and daily functioning, particularly for individuals with sensory challenges.

Together, these theoretical foundations explain why therapeutic horticulture resonates so deeply across diverse populations and settings. They demonstrate that the benefits we see—whether reduced stress, improved focus, greater autonomy, or enhanced social connection—are grounded in well-established psychological and developmental principles.

## Role of Research in TH

Research plays a critical role in advancing the field of therapeutic horticulture (TH). It provides the foundation for evidence-based practice, ensuring that interventions are not only meaningful, but also measurable, effective, and credible in professional settings.

**1. Building Evidence-Based Practices**

- Research helps practitioners understand what works, why it works, and for whom it works.
- By reviewing studies and applying findings, practitioners can design programs grounded in proven strategies rather than relying solely on intuition or tradition.
- Evidence-based practices enhance participant outcomes and allow for continuous program improvement.

**2. Supporting Funding and Grant Applications**

- Grant-making organizations and funders often require proof that programs are supported by research.
- Demonstrating that TH interventions are backed by peer-reviewed studies strengthens proposals and increases the likelihood of funding.
- Including citations, outcome data, and references to established research communicates that a program is professional, credible, and impactful.

**3. Making Compelling Cases to Administrators and Clients**

- Administrators and potential clients often ask: “Why should we invest in this program?”
- Research provides the data needed to answer that question. Practitioners can point to studies showing improvements in physical health, cognitive function, social interaction, and emotional well-being through TH.
- Presenting research findings helps frame TH not just as a “nice idea,” but as a proven, cost-effective intervention that delivers measurable results.

**4. Practitioner Growth and Field Development**

- Engaging with research allows practitioners to stay informed about emerging trends and new discoveries in the field.
- It encourages reflective practice, inspiring new activity designs, adaptations, and innovations.
- By contributing to research through documentation, case studies, or collaborations with universities, practitioners help build the growing body of evidence that strengthens the legitimacy of TH worldwide.

**Key Takeaway**

- **Seek clarification when needed:** If you have any questions or need clarification on a topic, don't hesitate to reach out to us at courses@rootinnature.ca or in the GrowTH Network chat forum. Please reach out at any time if there is anything that we can do to make this course more accessible to you. Closed captions and transcripts are available.
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# Role of Universal Design & Therapeutic Gardens

## Universal Design- Seven Principles

Universal design is the creation of environments, products, and systems that are usable by people of all abilities, ages, and backgrounds—without the need for adaptation or specialized design. Originally developed in architecture and environmental design, the concept has expanded into product development, technology, education, and therapeutic gardens.

**Everyday examples of universal design include**:

- Curb cuts and ramps
- Automatic doors
- Closed captioning
- Lever-style door handles
- Smartphones and voice assistants
- Public transportation design (low-floor buses, priority seating, stop announcements)
- Ergonomic kitchen tools

When applied to therapeutic horticulture (TH), universal design ensures that garden spaces, tools, and activities are accessible, inclusive, and adaptable for everyone. Below are the seven key principles of universal design and how they relate to TH practice.

## Seven Principles of Universal Design

### 1. Equitable Use

Design spaces and tools that can be used by people with diverse abilities:

- Ergonomic tools with easy-grip or extendable handles for limited hand strength.
- Chairs with armrests to support safe sitting and standing.
- Multiple entry points and wide pathways to accommodate wheelchairs, walkers, or canes.

### 2. Flexibility in Use

Provide adaptable features that respond to individual preferences and community needs:

- Movable planters with sensory plants for different mobility levels.
- Tables and seating that work for both group activities and solitary reflection.
- Tools designed for both right- and left-handed use.
- Seating areas in varied arrangements to suit different comfort levels.

### 3. Simple and Intuitive Use

Make the garden environment easy to understand regardless of a person's cognitive ability or prior experience:

- Use clear signage, symbols, and color-coded cues for wayfinding.
- Incorporate intuitive elements like raised beds at comfortable heights, well-defined pathways, and clearly labeled planting areas.

### 4. Perceptible Information

Ensure important information is communicated through multiple sensory channels:

- Tactile markers, Braille signage, or auditory signals to convey directions or safety cues.
- Pictorial instructions for easier understanding in diverse settings.
- Sensory plants that engage sight, sound, smell, taste, and touch to include participants with sensory impairments.

### 5. Tolerance for Error

Design gardens and activities to minimize risks and reduce consequences of mistakes:

- Soft, forgiving surfaces to cushion falls or dropped tools.
- Use of resilient, drought-tolerant plants that remain healthy even if care is inconsistent.

**6. Low Physical Effort**

Make gardening comfortable and efficient:

- Provide level surfaces, gentle slopes, smooth pathways, and raised beds.
- Incorporate adaptive tools such as long-handled rakes and ergonomic trowels.
- Aim for designs that require minimal strain or energy to use.

**7. Size and Space for Approach and Use**

Accommodate a wide range of body sizes, mobility aids, and assistive devices:

- Ensure wide pathways and clearance around planting beds, tools, and seating areas.
- Design flexible seating and workstations with adjustable heights and layouts to meet different reach and mobility needs.

## Role of Universal Design & Therapeutic Gardens

Therapeutic gardens serve as the physical and symbolic foundation for therapeutic horticulture (TH). While TH activities can be facilitated in almost any environment, a thoughtfully designed therapeutic garden provides unique opportunities to enhance participant experience, support diverse goals, and create a safe, welcoming atmosphere for growth and healing.

**1. A Dedicated Space for Healing and Connection**

- Therapeutic gardens provide a consistent, supportive environment where participants can connect with nature and each other.
- They signal to participants that the space is intentional and designed with care for their needs, fostering a sense of belonging and comfort.

**2. Accessibility and Inclusion**

- By integrating principles of universal design, therapeutic gardens ensure that people of all abilities can participate meaningfully.
- Features such as raised beds, wide pathways, accessible seating, and adaptive tools allow equitable access to gardening and nature-based activities.

### 3. Support for Therapeutic Goals

- Gardens function as a living classroom and healing space, where activities can be tailored to address physical, cognitive, social, emotional, and vocational goals.
- Examples include building strength through planting, fostering memory recall through sensory engagement, and encouraging teamwork through group projects.

### 4. Flexibility Across Settings

- Therapeutic gardens can be created in hospitals, long-term care facilities, schools, prisons, community centers, or private homes.
- They serve as a bridge between the clinical and the natural, supporting both structured interventions and informal opportunities for relaxation and reflection.

### 5. Enhancement of Well-Being Beyond Sessions

- Therapeutic gardens often remain available outside of scheduled TH sessions, giving participants a chance to revisit the space for personal reflection, relaxation, or social interaction.
- This accessibility reinforces therapeutic benefits and extends the impact of structured activities.

### 6. Symbolism and Metaphor

- Gardens embody cycles of growth, renewal, and resilience, providing powerful metaphors for participants' own experiences.
- This symbolic dimension can deepen self-reflection and meaning-making within therapeutic processes.

### 7. Opportunities for Vocational and Economic Participation

- Therapeutic gardens can also be productive spaces where participants grow vegetables, herbs, flowers, or other plant-based materials.
- These products may be used for value-added projects (such as crafts, herbal teas, or natural skincare) or sold at plant sales and markets.
- This dimension of garden use supports vocational skill-building, community engagement, and in some settings, program sustainability through revenue generation.

# Professional Ethics & Values of TH

**1. Client-Centered Care**

A care approach that prioritizes the needs, preferences, and goals of the individual, ensuring they are active partners in decision-making and treatment.

- **Influence**: Carl Rogers (1940s) – Psychologist
- **Core Idea**: Unconditional positive regard, empathy, and belief in the client's innate drive for growth and healing.
- **Practice in TH**:
  - Client = Expert of their own life.
  - Practitioner = Guide, not authority.
  - Build trust through empathy, respect, and non-judgment.

**2. Person-Centered Care (Preferred Modern Term)**

A person-centered approach to care is a philosophy and practice that places the individual receiving care at the heart of all decisions, recognizing them as an active partner in their own treatment, support, or healing process.

- **Reason for Preference**: Broader inclusivity, avoids labeling, aligns with modern health care, applies across disciplines.
- **Core Values**:
  - Respect for individual values & preferences
  - Collaboration & shared decision-making
  - Holistic focus
  - Empowerment & strengths-based orientation
  - Compassionate communication
  - Continuity & coordination of care

**3. Strengths-Based Perspective (SBP)**

An approach that focuses on identifying, building upon, and utilizing an individual's existing strengths, abilities, and resources—rather than centering on deficits or problems—in order to support growth, resilience, and positive change.

- **Practice in TH**:
  - Identify and build on what's working.
  - Empower clients through collaboration.
  - Recognize the client as the expert in their own life.

- **Cultural Lens**:
- *Indigenous Ways of Knowing*: Healing rooted in community, belief in unique gifts/purpose, and interconnectedness with people, land, and spirit. Plants are seen as friends, healers, and teachers.

**4. Least Restrictive Environment (LRE)**

A setting or set of support practices that enables individuals to participate as fully and independently as possible, while applying only the level of support or restriction necessary to ensure safety and success.

- **Core Principle**: Support autonomy, dignity, and participation by integrating clients into the most inclusive setting possible.
- **In Practice**:
  - Adapt the environment instead of separating clients.
  - Use supports (noise-canceling headphones, visual schedules, sensory-friendly tasks) to ensure inclusion without unnecessary segregation.
- **Guiding Values**: Dignity, autonomy, inclusion, normalization of life experiences.

LESSON 03

# FUNDAMENTALS OF THERAPEUTIC HORTICULTURE

# Therapeutic Horticulture Populations & Settings

Therapeutic horticulture (TH) is a versatile practice that can be adapted to nearly any population or setting. The key is recognizing the unique characteristics of participants and tailoring programs to meet their specific needs, goals, and environments.

## Key Factors in Planning TH Programs

When designing a TH program, practitioners consider several factors that guide facilitation:

- **Age** – Children, teenagers, adults, and older adults all bring unique strengths and challenges to the garden. Age influences everything from safety considerations and supervision needs to the kinds of activities that feel engaging and developmentally appropriate.
- **Participant Characteristics** – Interests, abilities, and challenges are central to planning. Programs are most effective when they honor the whole person—not just their diagnosis or limitations.
- **Individual and Group Goals** – Goals can be emotional, physical, social, cognitive, spiritual, or vocational. Some are broad wellness goals, while others may be more specific, particularly in clinical contexts.
- **Setting** – TH can take place indoors or outdoors, in community gardens, schools, hospitals, long-term care homes, prisons, and many other environments. Each setting offers unique opportunities and constraints.

## Participant Characteristics & Needs

Because TH is so adaptable, practitioners often work with people across a wide spectrum of abilities and health conditions. Below are some of the common participant needs you may encounter.

**Physical Impairments**
These include limited range of motion, muscle weakness, poor balance, tremors, chronic pain, difficulty gripping, or spasticity. Such impairments can affect how participants engage with gardening tasks, requiring adaptive tools and flexible activity design.

**Physical Disabilities**
Examples include cerebral palsy, spina bifida, limb loss, muscular dystrophy, paraplegia or quadriplegia, arthritis, and multiple sclerosis. Disabilities may require adjustments to the environment, from raised beds to specialized tools, so participants can engage fully and safely.

**Physical Diseases**
Conditions such as heart disease, asthma, lupus, cancer, diabetes, rheumatoid arthritis, and emphysema may not always be visible but can impact stamina, energy, and overall ability to participate. Pacing activities and offering rest breaks can make TH accessible and restorative.

**Mental Health Conditions**
Participants may be navigating mood disorders, anxiety disorders, trauma-related conditions, or other mental health challenges. TH programs can provide grounding, structure, and opportunities for positive coping—but should always be adapted to align with practitioner training and participant safety.

**Sensory Impairments**
Vision or hearing loss, as well as other sensory processing challenges such as those experienced by people diagnosed with autism, affect how individuals receive information and engage with their surroundings. Practitioners may adapt communication methods, use tactile or high-contrast cues, and design activities that maximize inclusion.

**Acquired Brain Injuries (ABI)**
These can be traumatic (such as concussion, skull fracture, penetrating injury, or shaken baby syndrome) or non-traumatic (such as stroke, brain tumor, seizure disorder, or aneurysm). People with ABI often experience changes in mobility, cognition, or emotional regulation that TH can help address through structured, repetitive, and sensory-rich activities.

**Dementia**
Forms include Alzheimer's disease, vascular dementia, and lewy body dementia. While dementia shares some symptoms with ABI, it is progressive in nature. TH activities—especially those that engage memory and the senses—can support relaxation, reduce agitation, and provide meaningful connection.

**Intellectual & Developmental Disabilities (I/DD)**
This category includes autism spectrum disorder, Down syndrome, and other developmental delays. It's important to note that learning disabilities are not the same as intellectual disabilities; for example, a person may have typical intellectual ability but require adaptations for processing information or engaging in group activities.

**Invisible Disabilities**
Not all disabilities are immediately visible. Conditions such as fibromyalgia, depression, chronic pain, asthma, Crohn's disease, Lyme disease, and sleep disorders can significantly impact daily functioning, even if they are not outwardly apparent. Practitioners should remain sensitive to hidden challenges, creating inclusive spaces that acknowledge and accommodate participants' needs.

These factors remind us that TH is not "one-size-fits-all." Instead, it's a practice that meets people where they are—honoring their abilities, adapting to their challenges, and creating opportunities for growth and connection through nature.

## Participant-Centered Goals in Therapeutic Horticulture

Setting clear goals is at the heart of therapeutic horticulture. Goals help define purpose, guide activity choices, and provide benchmarks for progress. They can be broad, focusing on overall wellness, or more specific in clinical contexts.

**Individual Goals**
These are typically co-created by the participant and the practitioner. Together, they explore strengths, challenges, and interests to identify outcomes that feel meaningful. For example, an individual goal might focus on improving fine motor skills through planting activities, building confidence by caring for a specific plant, or reducing anxiety through guided mindfulness practices in the garden.

**Group Goals**
Group goals are often developed collaboratively between the facilitator and participants. These goals may focus on social connection, teamwork, or shared learning. For instance, a group might set a goal to design and maintain a community herb garden, creating a collective sense of responsibility and accomplishment.

**Goal Domains**
Whether individual or group-based, goals in TH often span multiple areas of well-being, including:

- Emotional (reducing stress, building resilience)
- Physical (improving strength, coordination, mobility)
- Social (building friendships, fostering inclusion)
- Cognitive (stimulating memory, supporting focus)
- Spiritual (fostering gratitude, meaning, or connection)
- Vocational (building skills for employment or independence)

**Settings for Therapeutic Horticulture**

Therapeutic horticulture can thrive in a wide variety of environments. Each setting brings its own possibilities for engagement and healing:

- **Community Settings** - Neighborhood gardens, community centers, and civic programs often focus on wellness, social inclusion, and access to nature.
- **Horticultural Settings** - Farms, botanical gardens, and greenhouse facilities provide hands-on opportunities to engage with plants while learning horticultural skills.
- **Youth, Family & Vocational Support** - Schools, after-school programs, and job training initiatives use gardening to foster learning, teamwork, and skill development.
- **I/DD & Neurodivergent Supports** - Day programs and residential centers integrate TH activities to support sensory regulation, communication, and independence.
- **Aging Services & Elder Care** - Senior centers, assisted living, and long-term care facilities use TH to support memory, mobility, and social connection.

- **Military & Veteran Services** - VA hospitals and reintegration programs employ TH as a tool for relaxation, recovery, and community building.
- **Criminal Justice Programs** - Correctional facilities and re-entry initiatives use gardening to build responsibility, foster restoration, and develop vocational skills.
- **Behavioral & Mental Health** - Inpatient and outpatient programs integrate TH into therapeutic care to promote grounding, coping skills, and social engagement.
- **Medical & Rehabilitation Settings** - Hospitals, rehab centers, and outpatient clinics use TH to support healing, pain management, and improved quality of life.

## Programming Sites

Programming can take place indoors, outdoors, or through a combination of both. This flexibility allows for year-round engagement, regardless of weather or participant needs.

**Outdoor Examples**

- In-ground gardens, raised beds, and container gardens
- Vertical gardens, courtyards, atriums, and outdoor classrooms
- Farms, natural areas, and demonstration gardens
- Hydroponic and aquaponic systems

**Indoor Examples**

- Greenhouses, day rooms, activity spaces, and multipurpose dining rooms
- Patient rooms, grow light benches or carts, and group therapy rooms
- Hydroponic walls, break rooms, and conference rooms

What matters most is the intentional use of the space. Whether in a dedicated garden or a shared multipurpose room, the environment becomes therapeutic when activities are thoughtfully designed to support participant goals.

# Population-Specific TH Activities

Therapeutic horticulture is flexible and adaptable, making it possible to tailor activities for different populations. Each group brings its own strengths and challenges, and activities are designed to support specific goals while creating meaningful engagement with nature. Below are examples of how TH can be applied across diverse populations.

**Children with Developmental Disabilities**

For children with developmental disabilities, therapeutic horticulture offers opportunities to build social skills, communication, and fine motor abilities. Activities might include planting and harvesting vegetables, exploring textures and scents through sensory plants like lamb's ear or mint, and creating art with natural materials.

- **Example**: Root in Nature's Garden Club for autistic youth (ages 8–15) used gardening projects to foster connection, skill-building, and confidence when it was active.

**Adults with Depression or Anxiety**

For adults managing depression or anxiety, TH activities can encourage responsibility, accomplishment, mindfulness, and continuity. A structured project over several weeks allows participants to see progress and build consistency.

- **Example**: A six-week radish project might include:

1. Amending soil, sorting seeds, and playing a root vegetable guessing game
2. Planting diverse radish varieties and designing creative plant labels
3. Checking seedlings and companion planting (lettuce, spinach, carrots), with group discussions on mutual support
4. Thinning seedlings, paired with a metaphorical discussion about "letting go"
5. Harvesting radishes, cooking together, and reflecting as a group

This type of program builds week-to-week accomplishment while strengthening social connection and self-awareness.

**Seniors with Dementia**

For older adults living with dementia, therapeutic horticulture provides a way to stimulate cognition, reduce agitation, and promote relaxation. Activities often focus on sensory engagement and familiarity, such as tending to indoor gardens, engaging in plant reminiscence activities, or using herbs and flowers that evoke calming scents and memories.

**Veterans with PTSD**

Therapeutic horticulture can also support veterans experiencing post-traumatic stress disorder by offering avenues for relaxation, stress reduction, symptom management, and teamwork. Activities may include food gardening for healthier eating, creating peaceful and restorative garden spaces, or working with sensory-rich plants such as herbs and flowers.

- **Example:** Growing Veterans (USA) combines sustainable farming with community building for veterans, providing both therapeutic benefit and social reintegration.

**Individuals in Addiction Recovery**

For people in recovery from addiction, TH can encourage mindfulness, stress reduction, and a renewed sense of accomplishment. Programs may integrate mindful gardening practices, meditation with nature, or plant-based art projects. These activities promote grounding, build healthy routines, and provide creative outlets for expression.

Each of these examples demonstrates how TH activities can be thoughtfully adapted to meet the needs of diverse populations. Whether the goal is cognitive stimulation, emotional restoration, or skill-building, the garden provides a flexible and healing space for growth.

**Canadian Program Examples**
Across Canada and beyond, therapeutic horticulture programs are being implemented in creative ways that meet the needs of different communities. The following examples highlight how TH can be adapted to serve unique populations while fostering growth, connection, and well-being.

**Perley Health – Ottawa, Canada**

Perley Health has maintained a long-standing horticultural therapy program since the late 1990s. Since 2014, the program has been facilitated by a full-time Registered Horticultural Therapist, providing consistent leadership and expertise.
The program serves both seniors and veterans in long-term care as well as those living independently. What makes it distinctive is its integrated approach, combining therapeutic services with education and research. Participants benefit from structured, evidence-based sessions that promote social connection, physical engagement, and emotional support — all while contributing to the growing body of knowledge in the field.

**Earthwise Society – Garden Buddies Program (Tsawwassen, BC)**

The Earthwise Society runs a community-based therapeutic horticulture program called the Garden Buddies Program, designed for seniors but welcoming participants of all ages. This intergenerational model strengthens community ties and encourages collaboration across age groups.

The program has two main parts:

- **Monday Meetups** – Weekly group-led garden discussions focused on topics chosen by participants. This reflects an asset-based community development approach, where the interests and knowledge of the group guide the learning.
- **Garden Buddy Pairs** – Participants are paired to collaborate on plant-based projects, such as creating a tea garden. These partnerships foster mentorship, skill development, and meaningful social connections.

Together, these elements create an inclusive and empowering environment where participants learn from one another while deepening their connection to nature.

# Domains of Wellness

Therapeutic horticulture supports well-being across multiple domains, reflecting the holistic nature of human health. By engaging with plants and nature-based activities, participants experience benefits that reach beyond the garden itself—touching cognitive, physical, emotional, social, creative, and spiritual aspects of life.

**Cognitive/Intellectual Domain:**

- Improves self-esteem and reduces depression
- Improves sleep and cognitive issues in dementia patients
- Increases engagement and improves mood
- Restores attention in cancer patients
- Teaches new and satisfying horticultural skills and revisits previous experiences/knowledge
- Improves vocabulary and maintains communication
- Provides problem solving and intellectual stimulation
- Arouses a sense of curiosity

**Physical Domain:**

- Supports cardiovascular health
- Modifies progression of coronary heart disease by addressing associated anxiety and stress
- Boosts the absorption and retention of Vitamin D
- Engages both fine and gross motor movement to maintain and improve endurance, abilities and hand eye coordination
- Builds confidence and independence to continue acts of daily living which leads to a better quality of life
- Can aid in treatment of substance abuse

**Emotional Domain:**

- Protects and preserves mental health
- Helps to maintain a sense of purpose, confidence and worth
- Improves mood state and fosters emotional restoration
- Reduces stress
- Aids in the development of positive coping strategies in the event of a projected 4th/5th wave of the pandemic
- Opportunities for pleasure and relaxation, as well as a sense of pride and success with projects

**Social Domain:**

- Reduces isolation by increasing social connections and interacting in a group setting
- Promotes a sense of inclusion and belonging
- Improves teamwork skills
- Promotes positive interactions with others who have similar interests
- Re-engages old hobbies and passions

**Creative Domain:**

- Prevents boredom and provides stimulation of sensory perceptions
- Stimulates creativity by engaging in creative exercises
- Fosters imagination
- Develops an appreciation of the rhythm of life
- Provides an outlet to express creativity

**Spiritual Domain:**

- Connect to past and personal history
- Generates meaning through engagement in purposeful activities
- Fosters gratitude
- Encourages positive future thoughts through vision boards, etc.

These six domains demonstrate how therapeutic horticulture engages the whole person, supporting growth, healing, and well-being in ways that are deeply interconnected.

## Differences Between TH & HT

**Horticultural Therapy (HT)**

Horticultural therapy is a formal, clinical practice recognized as a professional discipline within healthcare and rehabilitation.

- **Practitioner:** Horticultural therapy is conducted by registered horticultural therapists (HTR). These professionals are qualified to design, facilitate, and document treatment-oriented horticultural interventions as part of individualized care.
- **Credentialing:** To become a registered horticultural therapist, an individual must complete college-level coursework in horticultural therapy, successfully fulfill a supervised internship, and obtain registration status through an accrediting body.
- **Process:** Involves documented, individualized treatment plans with clearly defined goals and measurable outcomes.

- **Settings:** Most commonly facilitated in healthcare, rehabilitation, or other clinical environments, often as part of an interdisciplinary care team. HT can also be conducted in community-based settings, though its structured, treatment-focused approach is more closely aligned with clinical contexts.
- **Example:** A registered horticultural therapist working with a patient recovering from a stroke, using structured planting tasks to rebuild fine motor skills and documenting measurable progress toward rehabilitation goals.

**Therapeutic Horticulture (TH)**
Therapeutic horticulture is a broad and flexible practice that uses plants and nature-based activities to promote health, well-being, and personal growth.

- **Practitioner:** TH can be facilitated by anyone who has specialized training in therapeutic horticulture or by a registered horticultural therapist. Practitioners may come from backgrounds such as education, horticulture, community programming, wellness, or healthcare.
- **Training:** Formal professional credentials are not required, though specialized training is highly recommended. Training enhances credibility and is often preferred by employers.
- **Settings:** TH is most often facilitated in community, educational, and wellness contexts (such as schools, community gardens, and senior centers) but is also commonly implemented in clinical environments.
- **Focus:** The emphasis is on enhancing quality of life, fostering connection, and supporting general health and well-being. While it is not a clinical treatment by definition, practitioners with clinical training may integrate TH activities toward clinical goals.
- **Example:** A practitioner leading a gardening group at a community center to encourage social connection, reduce stress, and promote healthy activity.

**Key Difference**

HT = Clinical, credentialed, treatment-based
TH = Broader, non-clinical, wellness- and growth-oriented

# TH Program Models

TH programs can be organized into three main models (or hybrids of more than one) depending on goals, setting, facilitator qualifications, and documentation requirements.

**1. Community Program Model**

- **Focus:** General wellness goals
- **Settings:** Community spaces (gardens, schools, senior centers, camps)
- **Facilitators:** TH/HT-trained professionals or HTRs
- **Goals:** Always established (individual and/or group)
- **Evaluation:** Progress monitored; documentation optional
- **Example Programs:**
  - **Farm at Penny Lane:** 40-acre farm, adults with severe mental illness, 2× weekly sessions (indoor/outdoor), combines community & vocational models.
  - **Retirement Communities:** Year-round indoor/outdoor sessions for older adults in memory care/rehab units, 2× month.
  - **Exceptional Students Summer Camp:** 3-week camp with therapeutic, educational, and emotional skill-building sessions.

**2. Clinical Program Model**

- **Focus:** Specific clinical goals
- **Settings:** Clinical/medical facilities (hospitals, rehab centers)
- **Facilitators:** HTRs or licensed clinicians with TH/HT training
- **Goals:** Always established (individual and group)
- **Evaluation:** Progress evaluated; documentation required
- **Example Program:**
  - Central Regional Hospital: 400-bed inpatient psychiatric hospital; multiple TH groups per week (indoor/outdoor); individualized treatment plans; clinical & vocational models combined.

**3. Vocational Program Model**

- **Focus:** Vocational skills development & job readiness goals
- **Settings:** Community spaces, institutions, or schools
- **Facilitators:** TH/HT-trained professionals or HTRs
- **Goals:** Always established (individual and/or group)
- **Evaluation:** Progress monitored; documentation may be required depending on context
- **Example Program:**
  - **High Security Treatment Facility:** Adolescent girls (14–20), daily 1.5-hour sessions, integrated with education, focus on job skills, documentation required.

**Hybrid Models**
Many TH programs blend elements of two or more models.

Examples from lesson:
Farm at Penny Lane (Community + Vocational)
Central Regional Hospital (Clinical + Vocational)

# TH Facilitation & Program Management Roles

Therapeutic horticulture (TH) programs succeed when practitioners bring both heart and structure to their work. Facilitation requires hands-on guidance with participants, while program management involves broader leadership responsibilities to ensure the program runs smoothly and sustainably.

**TH Practitioners as Facilitators**

Practitioners are often considered the “hands” of the program. They work directly with participants, creating meaningful and goal-oriented experiences. Core facilitation tasks include:

- Assess abilities and needs
- Co-create goals
- Design and facilitate activities
- Provide adaptive tools and techniques
- Often evaluate and document outcomes

**The Five Roles of a TH Program Manager**

In addition to facilitation, practitioners may also take on program management responsibilities. These roles can be thought of as the engine, mind, voice, heart, and eyes of the program.

**1. Pathfinder – Engine of the Program**

- Establishes program viability
- Writes and proposes programs
- Generates and secures funding
- Develops and manages the budget
- Manages stakeholder relationships
- Oversees programming environments
- Sets and evaluates program goals

**2. Educator – Mind of the Program**

- Teaches the purpose, practice, and benefits of TH to:
  - Site administrators and staff
  - Community stakeholders and policymakers
  - Funders, participants, and their families/caregivers
  - Interdisciplinary care teams

**3. Communicator – Voice of the Program**

- Handles external communication such as public relations and outreach
- Maintains internal communication with staff, volunteers, and partners
- Builds collaborations with other organizations and agencies

**4. Coordinator – Heart of the Program**

- Manages the program schedule
- Organizes staff, volunteers, and interns
- Communicates with the host site
- Oversees purchasing and vendor relationships
- Coordinates projects such as garden installations

**5. Safety Officer – Eyes of the Program**

Ensures both physical and psychological safety by:

*Physical Safety*

- Setting and enforcing ground rules
- Providing safety training
- Establishing site crisis plans
- Designing safe, accessible spaces
- Creating tool-use and storage protocols
- Conducting regular hazard scans

*Psychological Safety*

- Monitoring group dynamics
- Maintaining respectful, open communication
- Prioritizing participant consent and choice
- Ensuring accessibility and inclusivity
- Inviting ongoing feedback

These facilitation and management roles illustrate the multifaceted nature of therapeutic horticulture practice. A strong practitioner balances direct engagement with participants while also guiding the program's vision, structure, and safety.

LESSON 04

# TH PROGRAM DEVELOPMENT

# Stages of TH Program Development

Designing a therapeutic horticulture (TH) program requires thoughtful planning, flexibility, and a strong focus on participant needs. Whether starting in a fully resourced facility or building from the ground up, the development process follows a series of steps that guide programs toward success and sustainability.

## Developed Versus Undeveloped Sites

- **Developed Sites** – These settings already have infrastructure, funding, staff, a defined mission, identified populations, and programming in place. Practitioners can integrate TH directly into existing systems.

- **Undeveloped Sites** – These may lack infrastructure, funding, or staff, and often do not yet have a clear mission, population, or program framework. In these cases, practitioners may need to start from the ground up, laying the foundation before activities can begin.

## Stages of Program Development

### 1. Identify a Relevant Need

The golden rule of TH program development: always center on the needs of the population. Practitioners can uncover these needs by:

- Asking participants directly
- Observing and verifying needs
- Consulting stakeholders
- Reviewing research on the target population

### 2. Conduct a Site Assessment

Evaluate the physical and operational factors that influence program design:

- Indoor and outdoor spaces available
- Viability of the space for horticultural activities
- Safety concerns and required modifications
- Integration with existing site operations
- Financial requirements and potential impact

### 3. Conduct a Participant Assessment

Learn about the individuals who will be participating. Consider:

- Interests and motivations
- Abilities and challenges
- Environmental needs or modifications
- Cultural awareness and respect
- Availability and scheduling needs

### 4. Establish Goals

Goals should be defined both at the program level and the participant level.

- *Program Goals Example:*
  - Long-Term: Improve overall well-being and social connection among older adults in residential care.
  - Short-Term: Offer six weeks of TH gardening activities that promote teamwork and sensory engagement, twice per year.

- *Participant Goals Example:*
  - Long-Term: Build confidence and independence in managing anxiety.
  - Short-Term: Participate in a guided mindfulness gardening activity once per week for two months.

### 5. Determine Program Schedule

The schedule should align with the program model, participant goals, and site capacity. Activities may follow different formats:

- Closed-ended: Activities completed in one session.
- Successive: Activities that build upon one another over time.
- Hybrid: A mix of closed-ended and successive activities.

### 6. Design Activities

Use site and participant assessment data to design activities that align with goals. Ensure activities are documented with a written “activity recipe” or session plan. Consider:

- Alignment with participant goals and reporting needs
- Selection of an appropriate TH activity model
- Adaptations for accessibility and safety

**7. Facilitate Activities**

When facilitating, practitioners apply the core values and ethics of TH:

- Use a strengths-based approach
- Maintain the least restrictive environment
- Set clear professional boundaries
- Accommodate participant needs with adaptive tools and techniques
- Stay goal-oriented
- Manage both physical and psychological safety

**8. Evaluate Outcomes**

Finally, assess both program and participant progress. Evaluation methods may include:

- Documentation and charting
- Surveys or self-reports
- Visual observation
- Focus groups
- Well-being indicators
- Clinical assessments (where appropriate)

Evaluation not only measures impact but also informs necessary adjustments, ensuring programs remain responsive and effective.

# Asset-Based Community Development

**Asset-Based Community Development in Therapeutic Horticulture**

*Disclaimer: This approach works best with longer-term groups, such as residential or community-based settings. It may not be applicable to all populations, contexts, or environments.*

Asset-Based Community Development (ABCD) is an approach to community development that shifts the focus from deficits and problems to the strengths, skills, resources, and relationships already present within a community. In therapeutic horticulture, this perspective reinforces the idea that every participant has something valuable to contribute, and programs can be enriched when those gifts are recognized and mobilized.

**Definition & Core Principles**

ABCD operates on the belief that everyone has gifts — unique talents, skills, knowledge, and passions that can create change. Its core principles include:

- Identifying and mobilizing the strengths, skills, and resources already present within a community.
- Shifting from a needs- or deficit-based model to an asset-focused model.
- Encouraging collaboration, empowerment, and self-reliance.
- Building community capacity and fostering positive change from within.

This approach fosters ownership and sustainability by inviting people to contribute what they already know and care about.

**Relevance to Therapeutic Horticulture**

Therapeutic horticulture is inherently person-centered: participants are involved in decision-making, and their experiences and autonomy are valued. ABCD aligns with this philosophy by focusing on what participants bring to the table — their skills, interests, and nature connections — rather than emphasizing their challenges.

**In practice, ABCD within TH can:**

- Enhance agency, self-esteem, and belonging.
- Support holistic growth by validating participant contributions.
- Encourage collaboration and co-creation.
- Foster sustainability of TH initiatives by building capacity from within the group.

**Gift of the Heart, Hands, and Head (Assessment Tool)**

One simple way to put ABCD into action is through the Gift of the Heart, Hands, and Head tool. This activity demonstrates that everyone has something to offer, and it can be facilitated in person or virtually.

- **Heart (Passions)** – What do I care about?
  Examples: animals, climate change, family, community

- **Hands (Practical Skills/Talents)** – What do I enjoy doing?
  Examples: cooking, painting, gardening, music

- **Head (Knowledge to Share)** – What do I know about?
  Examples: permaculture, history, birding

| Gift | Meaning | Examples | Reflection |
|---|---|---|---|
| Heart | Passions | Animals, climate change, family, community | What do I care about? |
| Hands | Practical skills/talents | Cooking, painting, gardening, music | What do I enjoy doing? |
| Head | Knowledge to share | Permaculture, history, birding | What do I know about? |

This tool invites participants to reflect and share, helping the group recognize and build on one another's gifts.

## Five Types of Assets in ABCD (Applied to TH)

ABCD highlights five categories of assets that can be mobilized in therapeutic horticulture:

- **Individuals** – Skilled community members (e.g., an artist creating garden signage, an elder sharing native plant knowledge).
- **Associations** – Groups that can partner (e.g., nonprofits building accessible gardens, schools with garden projects).
- **Institutions** – Organizations offering support or funding (e.g., horticulture programs, healthcare facilities).
- **Physical Assets** – Land, facilities, or infrastructure (e.g., vacant lots, indoor spaces for winter programming).
- **Connections** – Networks and relationships (e.g., someone with a truck, extra seedlings, or project experience).

Important Notes

ABCD requires time to build trust and rapport. Practitioners may need to shift their role from "leader" to more of a coach or facilitator, creating space for participants to step into leadership roles. It is important to remember that ABCD may not be suitable for all populations or program contexts, particularly where immediate needs or clinical goals are the priority.

# Establishing TH Participant & Program Goals

Setting clear goals is essential in TH. Goals provide direction for activities, ensure alignment with participant needs, and create measurable benchmarks for success. They also strengthen program credibility, support funding and advocacy, and allow practitioners to both demonstrate outcomes and adapt interventions to best serve individuals and groups.

**Goals, Interventions & Outcomes**

**I**n practice, goals are part of a simple but powerful framework:

- **Goal** – The personal area of growth the participant is working toward
- **Intervention** – The method or activity used to support change
- **Outcome** – The change that results from working toward the goal

**TH vs. HT Goals**

It's important to distinguish between therapeutic horticulture (TH) and horticultural therapy (HT) goals:

- **Therapeutic Horticulture Goals** – Broad, flexible, often co-created with participants; progress may be monitored and sometimes documented, but formality varies.
- **Horticultural Therapy Goals** – Specific, measurable, and always co-created with the participant (and guardian if relevant); progress is formally monitored, documented, and evaluated.

**Long-Term vs. Short-Term Goals**

**Long-Term Goals (LTGs) –** Broad, high-level objectives that take time to achieve.
Example: "Increase participant's sense of self-confidence and autonomy in a group setting."

**Short-Term Goals (STGs) –** Smaller, specific steps that build toward long-term goals.
Example: "Independently complete a seed-starting activity with minimal guidance during the course of a 60-minute TH session."

**Example LTG/STG Pairs**

- Assisted Living Facility – Older Adults
  - LTG: Reduce isolation, increase sense of belonging (Social, Cognitive)
  - STG: Initiate one peer conversation per session
  - Activities: Sensory winter scavenger hunt, nature trivia

- **Hospital – Adults**
  - LTG: Increase physical mobility (Physical, Social)
  - STG: Engage in 15 minutes of light gardening twice weekly
  - Activities: Light garden maintenance, building bamboo tomato cages

- **Outpatient Mental Health – Adults**
  - LTG: Develop nature-based self-care practices (Emotional, Physical)
  - STG: Create and use herbal spa products as coping skills
  - Activities: Lavender bath salts, calendula-infused oil

- **Primary School – Children**
  - LTG: Improve self-regulation and focus (Emotional, Cognitive, Physical)
  - STG: Practice grounding techniques; complete 15-minute garden task with minimal redirection
  - Activities: Mindful plant observation, planting, watering, harvesting

**Program Goals vs. Participant Goals**

- **Participant Goals** – Focus on personal growth for an individual.
- **Program Goals** – Reflect broader impacts for the entire program, often based on shared participant needs or community priorities.

**Program Goal Examples:**

- *Denver Botanic Gardens – Community Program*
  - LTG: Increase meaningful outdoor engagement and provide inclusive, adaptive garden settings
  - STG: Offer two 1-hour sessions per week with hands-on activities for all abilities

- *Veteran Reintegration Program*
  - LTG: Reduce anxiety and hypervigilance, rebuild purpose, and foster peer connection
  - STG: Facilitate weekly small-group sessions in low-stimulation gardens, incorporating grounding and sensory-awareness techniques

This framework ensures that both individual and program-level goals remain clear, measurable, and aligned with the broader mission of therapeutic horticulture.

# Outcome Measurement & Documentation Methods

Formally measuring and documenting outcomes in therapeutic horticulture (TH) is not a requirement, but many practitioners choose to do so because it highlights program impact, tracks participant progress, and supports long-term funding and sustainability. Outcome measurement in TH doesn't need to be complicated—it is a way to notice, document, and share change. The following sections outline the basic steps and tools used to measure and document outcomes in TH programs.

**1. Identifying Goals**

- Measurement begins with clear goals.
- Practitioners first establish what the participant hopes to gain from a session or program cycle.
- Common goals include reducing stress, improving social connections, or strengthening physical coordination.
- Clear goals provide direction for both activity planning and outcome measurement.

**2. Choosing What to Measure**

- Once goals are set, practitioners determine what aspect of change to measure.
- For example:
  - Stress reduction → mood, relaxation, or self-reported stress levels
  - Physical skills → strength, dexterity, or coordination
- Deciding what to measure ensures that the most relevant and useful tools are selected.

**3. Selecting a Measurement Tool**

- Outcome measurement tools range from simple to complex:
  - Simple tools: rating scales, verbal reflections, or observation notes
  - Intermediate tools: structured checklists, participant surveys
  - Advanced tools: standardized or clinical assessments (used only when practitioners are qualified)
- New practitioners often start with simple scales or observation methods, expanding their toolkit as their practice grows.

**4. Collecting Information**

- Data can be gathered before, during, or after a session.
- Consistency is key—collect information the same way each time.
- Common approaches include:
- Asking participants to rate how they feel on a 1–5 scale at the beginning and end of a session
- Recording observations of participant behavior and interaction during activities
- Encouraging reflective questions or journaling
- Tracking social, emotional, or physical changes over time

**5. Capturing Honest Reflections**

- Tools such as rating scales are easy to use but have limitations.
- Participants may feel pressure to give "positive" responses or may find scales too simplistic.
- Practitioners should remain flexible and creative, seeking genuine reflections over perfect data.
- Honest responses—whether numerical, verbal, or visual—provide the most valuable insights.

**6. Examples of Measurement Tools**

- **Five-Point Likert Scale**

Participants rate how they feel on a 1–5 scale and reflect on progress toward a personal goal. This offers both a numerical measure and self-reflection.

- **Power of Comparison**

Participants use metaphors or visual prompts (e.g., "I feel like a wilted lettuce" or "I feel like a busy bee") to describe their current state. This fosters creativity, self-expression, and conversation.

- **Body Scan**

Participants use a body outline and color to represent physical or emotional states. Often paired with mindfulness exercises, this tool blends reflection and creative expression.

- **Wellness Surveys**

Practitioners create simple pre- and post-program surveys to track self-reported changes in well-being. While not scientifically validated, these provide useful general trends.

- **Session Observations**

Practitioners or assistants record participant behaviors, interactions, and progress during activities. This approach captures real-time information but requires support to avoid interrupting facilitation.

- **Clinical Assessments**

When properly trained, practitioners may use validated tools such as the Generalized Anxiety Disorder (GAD-7) assessment. These tools provide scientifically reliable data but should only be used within one's scope of practice.

**7. Documenting Results**

- Documentation transforms raw observations into usable data.
- Methods include session notes, tracking sheets, or logbooks.
- The process does not need to be complex—the priority is clarity, consistency, and accuracy.

**Key Takeaway**

Outcome measurement in therapeutic horticulture is about capturing change in ways that are practical, flexible, and participant-centered. By setting goals, choosing meaningful measures, using creative and consistent tools, documenting results, and sharing findings, practitioners strengthen their practice and demonstrate the value of TH. Even simple steps in measurement can make a significant difference in sustaining programs and building credibility for the field.

# Establishing a TH Program Schedule

When creating a program schedule, it's important to balance site logistics, participant needs, staff availability, and resources. A well-structured schedule supports consistency, accessibility, and overall program success.

**Key Scheduling Factors**

**Site Schedule & Facilities**
Consider both the physical environment and daily operations at the site:

- *Environmental/Logistical*: Light exposure, access to water, availability of seating and shade, type of garden beds, and secure storage for tools and materials.
- *Operational Rhythms:* Shift changes, potential space disruptions, noisy events or deliveries, and the availability of support staff.

**Participant Availability**
Schedules should reflect the lives of participants. Key considerations include:

- Work, school, or transportation commitments
- Guardian or caregiver availability for dependent participants

**Practitioner & Staff Availability**
Ensure staff coverage and availability for all aspects of the program:

- TH practitioner, co-facilitators, and site support staff
- Volunteers, interns, interpreters, or security staff as needed

**Program Model**
The type of program often determines session frequency and structure:

- *Community*: Broader focus, often with less frequent sessions
- *Clinical*: Structured programs with session frequency aligned to goals or goal acuity
- *Vocational*: Time-sensitive programs requiring consistent and frequent sessions

**Activity Types & Seasons**
Match activities to participant needs, available spaces, and seasonal conditions:

- Indoor vs. outdoor programming
- Regional weather considerations
- Session length and pacing
- Seasonal availability of plants and materials

**Funding**
Budgeting plays a central role in scheduling:

- Costs for supplies, materials, and practitioner labor
- Number of sessions possible within available funding
- Support from the host site or external funding sources

A thoughtful program schedule ensures that activities are feasible, inclusive, and aligned with both participant goals and organizational capacity. Consistency builds trust, while flexibility allows programs to adapt as needs and circumstances evolve.

## Year-Round Programming in TH

A common misconception is that TH programs can only run in spring and summer. In reality, TH is most impactful when offered year-round. With thoughtful planning, activities can evolve across the seasons, ensuring continuity, variety, and deeper participant connection. Planning months ahead also allows activities to build on one another, creating meaningful threads between sessions.

**Examples of Seasonal Continuity**

- **Spring → Fall** – Plant pumpkin seeds in early spring, then harvest in the fall for carving, cooking, or autumn centerpieces.
- **Summer → Winter** – Press flowers in the summer, then use them for winter crafts such as handmade cards or bookmarks.
- **Winter → Spring → Summer → Winter** – Order unique herb varieties in winter, start them in spring, enjoy them in summer teas, and dry them for winter potpourri.

These types of projects help participants experience the cyclical nature of plants and highlight the role of patience, growth, and renewal in everyday life.

## Planning Tips

**Seasonality**
Align programming with natural cycles to strengthen participants' sense of connection with the environment. Examples include harvest celebrations in autumn, lavender festivals in midsummer, festive crafts during the holidays, or Valentine's flower arranging in February.

**Planning Meetings**
Gather participants, staff, and volunteers for an annual planning session—ideally in January. These meetings invite input on activity ideas, seasonal preferences, and traditions, giving participants ownership in shaping the program.

**Calendars**
Use the input from planning meetings to build detailed activity calendars for the year. A clear, forward-looking calendar smooths program delivery, ensures variety, and helps staff prepare materials and resources in advance.

# Year-Round Programming in TH

*Note: The following information reflects compensation models and rates commonly used in North America. Figures are provided as general reference points and may not reflect practices in other regions.*

Practitioners of TH can be employed in a variety of models, each with different benefits, income structures, and opportunities. Understanding these models helps practitioners choose the pathway that best fits their skills, lifestyle, and professional goals.

**Common Employment Models**

- **Employee**
  - ***Part-Time*:** Less than 30 hours per week
  - ***Full-Time*:** 30–40 hours per week
  - ***Role Integration*:** TH responsibilities are incorporated into an existing role (e.g., Activities Director, Occupational Therapist, Educator)

- **Contractor**
  - Independent practitioners or consultants hired on a project or session basis

- **For-Profit Private Business**
  - Practitioners operate their own business, offering sessions, consultations, or garden design services
- **Non-Profit Organization**
  - Work within or lead mission-driven organizations, often supported by grants, donations, or sponsorships


- **For-Profit Private Business**
  - Practitioners operate their own business, offering sessions, consultations, or garden design services
- **Non-Profit Organization**
  - Work within or lead mission-driven organizations, often supported by grants, donations, or sponsorships


**Common TH Employment Settings**
- Hospitals
- Rehabilitation centers
- Long-term care homes
- Schools (primary through university)
- Community centers
- Public gardens

### Employee Model – Compensation
- ***Part-Time:*** $15–$30 per hour
- ***Full-Time:*** $35,000–$60,000 per year
- ***Role Integration:*** Same or slightly higher than existing role pay, depending on TH specialization

**Compensation Factors**: Education, TH/HT certification, years of experience, program setting, funding availability, and employer awareness of TH value.
**Examples**:
- ***Part-Time*:** Public Botanical Garden – TH Facilitator, 10–12 hrs./week, $26/hour, no benefits, with potential to expand into a full-time role.
- ***Full-Time*:** Rehabilitation Hospital – TH Program Manager, 40 hrs./week, $52,000/year, full benefits, member of interdisciplinary care team.
- ***Role Integration*:** Assisted Living Facility – Activities Director with a TH specialization, +8% pay increase, full benefits, contributes to higher resident satisfaction and revenue.

**Contractor Model – Income Sources**
- ***For-Profit**:* Fees for service (sessions, consultations, garden design), partnership grants, sponsorships.
- **Non-Profit:** Grants, donor contributions, corporate sponsorships.

**Compensation Ranges**:
- ***For-Profit*:**
  - TH Session Facilitation: $75–$150/hour
  - TH Consultation/Garden Design: $100–$200/hour

**Examples:**

- **For-Profit Business:** Owner/Practitioner, 40+ hrs/week, $125/hour sessions, $150/hour consultations. No benefits but highly flexible, creative, and independent.
- **Non-Profit Organization:** Founder/Director, 40+ hrs/week, $50–$75/session. Funding through grants and donors, basic benefits, strong focus on underserved communities.

This range of employment models demonstrates the versatility of TH practice. While compensation varies by setting, funding, and structure, opportunities exist for both stable employment and entrepreneurial growth.

## Self-Employment Versus Employment

Choosing between employment and self-employment has a significant impact on autonomy, stability, income, and administrative responsibilities. The “right” path depends on personal preferences, skills, financial readiness, and life circumstances.

**Self-Employment**

Pros

- **Autonomy** – Full control over schedule, clients, and services.
- **Potential Higher Earnings** – Ability to set and negotiate rates while keeping profits.
- **Flexibility** – Freedom to choose work hours, locations (including virtual options), and environments.
- **Personal Fulfillment** – Satisfaction in building and growing your own business or brand.

Cons

- **Financial Instability** – Fluctuating income, startup costs, and irregular payments are common challenges.
- **Administrative Burden** – Marketing, invoicing, scheduling, and bookkeeping all fall to you.
- **No Employee Benefits** – Responsibility for your own health insurance, retirement savings, vacation, and sick leave.

**Employment**

Pros

- **Stability** – Consistent income, benefits, and job security.
- **Professional Support** – Access to colleagues, supervisors, and mentorship opportunities.
- **Reduced Admin Load** – Administrative responsibilities are managed by the employer or support staff.

Cons

- **Limited Autonomy** – Work is shaped by organizational policies, structures, and protocols.
- **Less Flexibility** – Set schedules, locations, and program models.
- **Potential Job Dissatisfaction** – Misalignment with personal values, goals, or workplace culture may reduce fulfillment.

**Self-Employment Tips** *(experience-based, not formal business advice)*

- **Licensing & Insurance** – Register your business, obtain liability insurance, and secure required permits.
- **Invest in Branding** – A professional logo and consistent design build credibility; creative touches (e.g., seed-packet business cards) can make a lasting impression.
- **Website** – Keep content clear, concise, and easy to search, with services, bio, and contact information.
- **Quality Photos** – Use professional headshots and images of your work for marketing and outreach.
- **Peer Connection** – Avoid isolation by engaging in professional networks such as GrowTH.

**Factors to Consider Before Choosing Self-Employment**

- Local awareness of and appetite for TH services
- Area demographics and the needs of your target market
- Competition and strategies for differentiation
- Personal financial situation, commitments, and risk tolerance
- Business model options (sole proprietorship, partnership, online-based, etc.)

This comparison highlights the trade-offs between employment and self-employment. Both can provide rewarding opportunities in TH, but success depends on aligning the model with your professional goals, personal circumstances, and community needs.

LESSON 05

# TH ACTIVITY FACILITATION

# Building a Session Plan

Strong facilitation begins with intentional planning. A well-structured session provides balance, engagement, and meaningful outcomes for participants. TH practitioners benefit from understanding the difference between activities, sessions, and programs, and using these distinctions to build clear, goal-oriented plans.

**Defining Terms in TH**

- **Activity –** A specific plant, gardening, or nature-based task designed for therapeutic benefit.
- **Session –** A structured time block (typically 1–2 hours) in which one or more activities occur.
- **Program –** A series of sessions delivered over a defined period (e.g., an 8-week program with weekly 1-hour sessions for older adults in long-term care).

**Typical Session Structure**

Most sessions include 2-3 curated activities that balance engagement, focus, and reflection.

**1. Introductions**

- *Purpose*: Build rapport, welcome participants, and set context.
- *Examples*:
  - Name + garden-related question (e.g., “What’s growing in your garden right now?”)
  - One-word share (e.g., a favorite herb or “the plant I feel like today”)
  - Creating name tags together
- *Note*: Introductions may be shortened or skipped in one-time or public workshops.

**2. Opening Activity**

- *Purpose*: Lightly engage participants, spark conversation, and introduce the session’s theme.
- *Examples*: Trivia, plant guessing games, or short mindfulness activities.

**3. Hands-On Main Activity**

- *Purpose*: Provide the central TH experience, incorporating sensory, physical, emotional, or skill-based engagement.
- *Examples*: Compostable pots, flower arranging, seed starting, lavender sachets, weeding, or herbal tea making.

**4. Closing Reflective Activity**

- *Purpose*: Create space for reflection, helping participants process experiences and insights.
- *Examples*: Journaling, a one-word checkout, or pair sharing.

**Example Session Plan – *Tomato Theme***

- **Introductions:** "Share your name and your favorite tomato recipe."
- **Opening:** Tomato varieties guessing game.
- **Hands-On Main Activity Options:**
    - *Planting*: Together, plant five tomato plants in a communal raised bed. Demonstrate proper planting and trellis support, and connect the activity to the idea that plants and people both thrive when given the right support systems.
    - *Tasting*: Sample several tomato varieties with balsamic vinegar and olive oil. Encourage discussion about flavor, memories, and cultural connections.
- **Closing:** Invite reflection by asking, "What was your favorite part of today's session?"

This structure ensures that sessions are engaging, purposeful, and grounded in participant needs, while also leaving room for creativity and spontaneity.

# Best Practices For Activity Facilitation in TH

Establishing a safe, supportive, and well-structured environment is the foundation of effective TH. Strong facilitation fosters trust, encourages engagement, and allows participants to explore growth and healing through plant- and nature-based activities.

**Creating the Right Environment**

- Supportive Space – Foster safety, trust, and mutual respect.
- Clear Rules & Flexibility – Establish group guidelines while allowing room for individual needs and preferences.

**Planning & Structure**

- Set Clear Objectives – Define the purpose of each activity; decide whether to share these goals with participants in advance.
- Balance Discussion & Activity – Create space for conversation, but maintain focus. In recurring groups, establish ground rules about redirection if needed.

**Instruction & Communication**

- Clear, Simple Instructions – Use plain language and step-by-step guidance.
- Demonstrate Tasks – Provide visual modeling and support individuals as needed.
- Use Visual Aids – Example: display seed packets for non-verbal participants to reference.
- Encourage Self-Reflection – Use open-ended questions to spark thought and sharing.
- Promote Inclusion – Yes/No questions support participation for those with communication challenges.

**Safety & Professionalism**

- Safety First – Apply plant, tool, and site safety guidelines consistently.
- Work Within Competence – Ensure qualified staff are present to meet participant needs.
- Active Listening – Show interest by paraphrasing, summarizing, and asking thoughtful questions.
- Strengths-Based Approach – Identify and encourage participant gifts to build resilience.
- Set Boundaries – Maintain professionalism to protect both practitioner well-being and participant trust.

**Sustainability**

- Eco-Conscious Practices – Incorporate organic gardening, composting, and rainwater collection.
- Repurposing & Recycling – Use simple, sustainable materials (e.g., jars for flower arranging, recycled packaging).
- Ethical Sourcing – Choose program supplies that reflect environmental and social responsibility.

**Participant Autonomy**

- Offer Choices – Encourage independence by giving participants meaningful options.
  - Examples: Choosing bouquet colors, selecting the next week's activity topic.

These practices contribute to sessions that are safe, purposeful, and empowering, while also modeling sustainability and respect for both people and the environment.

**Utilize the Person-Centered Approach**

The person-centered approach, developed by Carl Rogers, is foundational to TH as well as many other therapeutic practices. This approach emphasizes the therapeutic use of self—the ability of the practitioner to create a supportive, empowering environment that fosters healing, trust, and growth.

**Three Core Elements**

- **Empathy**
  - Understand and share another's feelings without judgment.
  - "Feel with" someone, not "for" them.
  - Step into the participant's perspective and communicate acceptance.
  - Builds safety, trust, and validation within the therapeutic relationship.
- **Congruence**
  - Be authentic and transparent, rather than hiding behind a professional façade.
  - Allow your personality to come through while maintaining professionalism.
  - Promotes honesty, trust, and a genuine practitioner–participant connection.
- **Unconditional Positive Regard**
  - Offer complete acceptance and respect for participants, regardless of their actions or feelings.
  - Maintain a warm, nonjudgmental attitude that communicates belief in their worth.
  - Reinforces the participant's potential for growth and self-determination.

**Practitioner Responsibility**

**Applying a person-centered approach in TH requires practitioners to:**

- Adapt their own facilitation style to the environment and participant needs.
- Use the therapeutic use of self—their presence, authenticity, and responsiveness—as a core tool.
- Design balanced sessions that combine activities supporting emotional, social, physical, and cognitive goals.
- Align all activities with clearly established therapeutic goals while maintaining flexibility and responsiveness.

# Activity, Environment, and Therapeutic Use of Self

Matthew Wichrowski, HTR, identified three essential elements of horticultural therapy that are equally foundational in TH practice: **therapeutic use of self, environment, and activity**. Together, these elements create a holistic framework for meaningful, goal-oriented engagement.

**1. Therapeutic Use of Self**

The practitioner is a central tool in the therapeutic process. By bringing qualities such as empathy, authenticity, warmth, and respect, the TH practitioner fosters a safe and supportive relationship. This therapeutic alliance **i**s often the key factor in participant growth and success.

Through presence and genuine interaction, practitioners create an environment where participants feel validated and empowered to explore emotional, cognitive, and behavioral growth.

**2. Environment**

The natural environment itself is a powerful therapeutic tool. It provides a sensory-rich setting that supports relaxation, reflection, and engagement. Depending on the program context, TH can occur in a variety of environments, such as:

- Balcony or rooftop gardens
- Community gardens
- Public demonstration gardens
- Farms or parks
- Greenhouses
- Community rooms
- Forests or natural areas

Each setting offers unique opportunities for connection, sensory engagement, and therapeutic outcomes.

### 3. Activity

Activities in TH are purposeful, meaningful, and designed to connect participants with plants and nature. They are the vehicle through which goals are achieved.

**Examples** (from Root in Nature's Activity Database):

- Starting seeds
- Rolling beeswax candles
- Guided meditation
- Soil testing

**Benefits**: Activities provide goal-driven engagement, opportunities for personal growth, skill development, and enhanced well-being.

### Therapeutic Approach

The way activities and environments are facilitated depends on the practitioner's approach—their philosophy, principles, and strategies. A facilitator's background, skills, and values strongly influence this process.

**Example Approaches:**

- Person-centered
- Strengths-based or asset-based
- Food security or food justice principles
- Reflective practice

**Example in Action:**

- *Facilitator A*: Focuses on edible seeds, invites participant tips, and begins with reflective opening questions (e.g., "What phase of a seedling do you feel like today?").
- *Facilitator B*: Focuses on flower seeds, uses soil pellets, and emphasizes aesthetic outcomes.

The same activity—seed starting—can be facilitated in very different ways depending on the practitioner's approach.

### Key Takeaway

- Therapeutic use of self builds trust, safety, and authentic connection.
- Environment shapes the sensory and emotional tone of the session.
- Activity provides purposeful, goal-directed engagement.
- Approach determines how these elements are woven together and adapted to participant needs.

# Facilitation Safety Practices

Safety in TH extends beyond the physical environment. Practitioners must actively create conditions that support physical, cultural, and emotional safety. Together, these areas ensure that participants feel protected, respected, and empowered.

## 1. Physical Safety

**Hydration & Weather Preparedness**

- Encourage regular water intake; bring a cooler with water bottles in warmer months.
- Offer garden-infused water (e.g., mint, lemon balm) during breaks.
- Check weather forecasts and adapt activities for extreme heat or cold.
- Provide hats, sunscreen, and shaded seating areas in summer.
- Shorten or reschedule sessions during unsafe weather conditions.

**Hazard Awareness & Prevention**

- Identify and remove tripping hazards (hoses, tools, roots, uneven ground).
- Maintain wide, clear pathways for participants with mobility devices.
- Encourage protective gear: gloves, long sleeves, pants, and closed-toe shoes.

**Garden Chemicals**

- Follow label instructions carefully and wear protective equipment.
- Clearly label and store all chemicals; avoid direct skin or eye contact.

**Support & Assistance**

- Provide hand-over-hand guidance for tasks such as cutting flowers or sowing seeds—only with participant consent.
- Ensure physical support is gentle, brief, and specific to the task.


**General Safety Measures**

- Keep workspaces clean and organized
- Stretch before physically demanding work
- Ensure tetanus vaccinations are current
- Be prepared: know where the first aid kit is, keep emergency contacts visible
- Fence off ponds or water features to prevent accidents
- Always “call before you dig” (contact local utilities provider)
- In public or high-risk areas, use thick gloves, trash grabbers, and sharps containers
- Conduct routine safety assessments of the workspace before each program

## 2. Cultural Safety

**Practitioner Awareness**

- Engage in self-reflection to identify personal biases and assumptions.
- Commit to ongoing education about diverse cultural traditions, histories, and current issues.

**Inclusive Practice**

- Establish group guidelines that promote respect, trust, and inclusion.
- Use language that is culturally sensitive and respectful.
- Co-create group rules with participants for shared ownership.
- Invite regular feedback on cultural safety and implement improvements as needed.

## 3. Emotional Safety

**Trauma-Informed Approach**

- Recognize that many participants may have trauma histories.
- Foster environments that prioritize safety, choice, and empowerment.
- Be alert to signs of trauma and respond with sensitivity.

**Conflict Management**

- Address disagreements respectfully and constructively.
- Encourage open communication and collaborative problem-solving.

**Trust & Support**

- Be consistent, reliable, and responsive.
- Provide opportunities for participants to connect and share experiences.
- Encourage peer support and constructive feedback within groups.

By attending to physical, cultural, and emotional safety, practitioners build environments that support healing and growth while modeling respect and inclusivity.

# Nature Metaphors in TH

**Nature Metaphors in TH**

Metaphors are a powerful tool in facilitation. By comparing one thing to another, metaphors invite deeper understanding and emotional connection. In TH, nature-based metaphors are especially impactful because they mirror human experiences in ways that are accessible, meaningful, and non-threatening.

T**herapeutic Value of Metaphors**

- **Nature mirrors human experience** – growth, change, resilience, and adaptation.
- **Abstract concepts become tangible** – making complex ideas easier to understand.
- **Non-threatening opportunities for reflection** – metaphors create space for participants to explore personal challenges and growth indirectly, which can feel safer than direct discussion.

**Common Nature Metaphors in TH**

- **Weathering Storms →** Resilience through challenges
- **Seasonal Changes →** Life transitions and cycles
- **Plant Growth / Seeds →** Personal development, new beginnings
- **Water & Sun →** Nourishment and energy needed to thrive
- **Soil →** Foundational support for growth and stability

**Soil-Themed Reflection Activity**
Use soil as a metaphor for life experiences and personal growth. Reflection prompts may include:

- *What makes up the "soil content" in my life right now?*
- *What lessons did I "harvest" from today's session?*
- *What amendments can I add to my life to strengthen my "soil"?*

**Plant Habit Metaphors**

- **Vines** → Seeking connection and support
- **Cactus** → Guarded yet resilient
- **Sunflower** → Optimistic, turning toward light and positivity
- **Groundcover** → Steady, stabilizing presence in a community or group

**Gardening Metaphors**

- **Weeding** → Letting go or setting boundaries
- **Pruning** → Encouraging healthy growth
- **Grafting** → Transformation through connection with others
- **Transplanting** → Navigating transitions or starting over
- **Deadheading** → Releasing the old to make space for new growth
- **Propagation** → Renewal, sharing, and new beginnings

**Benefits of Nature Metaphors**

- Encourage patience and self-compassion
- Honor diversity and individual life paths
- Connect participants to something larger than themselves
- Create space for hope, resilience, and healing

# Developing Goal - Driven TH Environments

A well-designed environment is central to the success of TH programs. Whether indoors or outdoors, the space should be intentional, accessible, and aligned with program goals. Therapeutic gardens and indoor spaces both serve as living classrooms and healing environments, supporting participant well-being and engagement.

**Outdoor Programming Spaces**

A therapeutic garden is a plant-rich environment designed to support active and passive engagement, healing, connection, and overall well-being. Within this broad category, several subtypes exist:

- **Healing Gardens** – Promote comfort, peace, and recovery through soothing natural elements.
- **Horticultural Therapy Gardens** – Purpose-built spaces where registered horticultural therapists conduct structured, goal-oriented interventions.

- **Sensory Gardens** – Engage sight, sound, smell, touch, and taste to stimulate or soothe participants of all abilities.
- **Restorative Gardens** – Focus on stress reduction, mental clarity, and emotional renewal.
- **Rehabilitation Gardens** – Support physical, cognitive, or vocational skill-building as part of recovery.
- **Natural Areas & Trails** – Provide immersive, unstructured interaction with nature for exercise, exploration, and reflection.
- **Outdoor Classrooms** – Integrate education and hands-on horticulture in schools or community programs.
- **Courtyards & Rooftops** – Transform small or urban spaces into accessible therapeutic environments.
- **Portable Setups (carts, trays, vehicles)** – Bring gardening activities to participants who cannot access outdoor spaces directly.

**Indoor Programming Spaces**

Indoor TH spaces expand access year-round and provide controlled environments where participants can safely engage in activities.

**Key Traits:**
- Flexible, year-round use
- Controlled, accessible environment
- Adequate lighting and ventilation
- Safe, cleanable surfaces
- Storage solutions for tools and materials
- Comfortable and safe walking areas

These features make indoor programming possible even in facilities with limited outdoor access.

## 7 Principles of Universal Design

Therapeutic environments should be designed with Universal Design principles to ensure access, inclusion, and safety for all participants:

1. **Equitable Use** – Design is useful to people with diverse abilities.
2. **Flexibility in Use** – Accommodates a wide range of preferences and abilities.
3. **Simple and Intuitive Use** – Easy to understand regardless of user experience or literacy.
4. **Perceptible Information** – Communicates necessary information effectively through multiple modes (visual, tactile, auditory).
5. **Tolerance for Error** – Minimizes hazards and unintended actions.
6. **Low Physical Effort** – Can be used efficiently and comfortably with minimal fatigue.
7. **Size and Space for Approach and Use** – Provides appropriate space regardless of mobility or assistive device needs.

By combining thoughtful design of space with the principles of accessibility and safety, practitioners can create TH environments that not only meet participant needs but also support long-term program sustainability.

## Six Properties of Therapeutic Programming Environments

Therapeutic programming environments are more than just physical spaces—they are intentionally designed to foster safety, accessibility, and meaningful engagement. The following six properties provide a framework for creating environments that support participant well-being and program success.

### 1. Designed with Intention

Spaces are created with purpose, grounded in the needs and abilities of the population served. Key considerations include:

- Cultural relevance and inclusion
- Opportunities for both active and passive engagement
- Functional, aesthetic, and accessible features
- Adaptability for both individual and group use

### 2. Designed for Safety

Safety is a cornerstone of therapeutic environments. This includes:

- Safe walking surfaces, ramps, and handrails
- Clear sight lines and secure fencing
- Accessibility for medical personnel when needed
- Use of non-toxic, non-hazardous materials

### 3. Strategic Plant Selections

Plants play both practical and therapeutic roles. Choices should reflect:

- **For activities**: Sensory plants, craft materials, or vocational skill-building crops
- **For ambience**: Seasonal interest, color, fragrance, and wildlife interaction
- **For safety**: Avoidance of toxic, allergenic, or otherwise dangerous species

**4. Provides Orientation & Context**


Well-designed environments help participants feel grounded and oriented. Features may include:

- Directional and place-making signs
- Plant labels and interactive engagement signs (e.g., "*smell me*", "*touch me*")
- Cultural, ecological, or historical information that deepens connection

**5. Appropriate Level of Stimulation**


Different program goals require different sensory environments:

- **Low-stimulation areas** for rest, reflection, and relaxation
- **High-stimulation areas** for active engagement and group activities

**6. Human Comforts & Play Element**s

Human-centered design ensures comfort and enjoyment, while play elements add creativity and delight.

- Comforts: Restrooms, shaded areas, seating, water access, and work surfaces
- Play Elements: Wind chimes, art installations, musical instruments, ponds/fountains, insect hotels, bird baths, or feeders

By intentionally incorporating these six properties, practitioners can design therapeutic environments that balance functionality, safety, accessibility, and joy—spaces where participants feel supported to grow, connect, and thrive.

## Design Considerations by Program Model

## Community Model

Community-based TH programs are often the most adaptable, as they typically operate with fewer restrictions and less need for direct supervision compared to clinical or institutional settings. This flexibility allows practitioners to design diverse, multipurpose environments that serve a wide range of goals, activities, and participant populations.

**Versatility and Accessibility**

Community gardens thrive when designed for inclusion. Environments that accommodate multiple ages, abilities, and cultural backgrounds create stronger participation. Examples include:

- A mix of perennial and annual beds
- Raised beds at different heights
- Container gardens for flexible placement

The more versatile the garden, the greater the opportunities for multigenerational and multicultural engagement.

**Range of Activities**

Adaptable community spaces can support a spectrum of experiences, from quiet sensory exploration to large-scale group projects. Examples include:

- **Vegetable gardens** – used for nutritional education, cooking demonstrations, and shared meals
- **Group projects** – fostering collaboration and skill-building
- **Seasonal events** – harvest festivals, seed swaps, or cultural celebrations

These activities strengthen food security while fostering connection and shared purpose.

**Supporting Ongoing Engagement**

For programs with regular attendance, adding specialized spaces can expand engagement and sustainability:

- Seed-starting and propagation stations
- Workspaces for creating value-added products (e.g., herbal teas, garden crafts, potted arrangements)
- Areas designated for vocational skill-building

Products from these activities can also be used in fundraising or charitable donation, reinforcing both program sustainability and community impact.

**Key Takeaway**

Community-based TH environments thrive when they are **welcoming, adaptable, and inclusive**. By offering flexibility and variety, they become spaces where plants grow, skills develop, and communities flourish together.

## Clinical Model:

Clinical TH programs typically serve participants with greater physical, emotional, or behavioral support needs. As such, these programs require higher levels of supervision, structured programming, and carefully designed spaces that maximize therapeutic benefit while prioritizing safety and risk management.

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- Seed-starting and propagation stations
- Workspaces for creating value-added products (e.g., herbal teas, garden crafts, potted arrangements)
- Areas designated for vocational skill-building

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**Safety and Supervision**

In clinical environments, safety is central to design.

- **Clear sightlines** are critical in mental health or correctional settings to minimize the risk of self-harm or interpersonal harm.
- In physical rehabilitation programs, designs must accommodate **wheelchairs, walkers, and other mobility devices** while leaving space for one-on-one therapeutic care.
- Every element of the garden should reflect the realities of clinical oversight.

**Holistic Health Goals**

Clinical gardens often address **physical, emotional, and spiritual well-being**.

- **Medicinal herb gardens** reinforce themes of healing and self-care.
- **Sensory gardens** encourage mindfulness, grounding, and emotional restoration.
- Design elements should align with the broader care goals of the setting.

**Demonstration and Education**

In these programs, vegetable gardens are typically **demonstration-based rather than production-focused**.

- They provide opportunities to teach about nutrition and the therapeutic value of fresh foods.
- This approach supports the principle that *“food is medicine”* without requiring intensive upkeep.

**Adaptability for Session Types**

**Clinical settings often require multiple types of spaces:**

- Private, comfortable areas for one-on-one therapy.
- Open group spaces for small group activities.
- In some contexts, gardens also serve staff and families, providing supportive environments for difficult conversations, such as hospice care discussions.

**Support for Staff Wellness**

Clinical gardens benefit not only patients but also staff, who often face high documentation demands and burnout.

- Dedicated staff spaces can offer moments of respite and reflection.
- Integrating staff wellness into garden use reinforces the value of TH across the care team.

**Maintenance and Sustainability**
Because clinical staff often have limited time for garden upkeep, design must be realistic and sustainable.

- Gardens should be small, purposeful, and low-maintenance, or supported by volunteers and grounds staff.
- Every square foot should serve a clear purpose, directly tied to therapeutic goals and operational realities.

**Key Takeaway**

Clinical program gardens thrive when they are **safe, structured, and purposeful**. By balancing therapeutic engagement with risk management, staff capacity, and participant needs, these environments become powerful tools for healing and holistic care.

## Vocational Model:

Vocational TH programs focus on **j**ob readiness and work-related skill-building. Unlike community or clinical models, these environments are intentionally structured to simulate professional workplaces, preparing participants to meet the demands of real employment.

**Workplace Simulation**

Programming spaces are designed to reflect real-world horticultural and landscaping environments. Examples include:

- Production greenhouses and nursery benches
- Landscaping areas with turf, trees, and shrubs
- Vegetable fields or crop plots
- Workstations for propagation, transplanting, and potting

These spaces allow participants to gain hands-on experience with the tasks and conditions they will encounter in professional settings.

**Skill Development**

Vocational activities emphasize both technical horticulture skills and physical endurance required in the workplace.

- Repetitive motions such as transplanting flats, crouching, lifting, or carrying build strength, stamina, and coordination.
- Horticultural tasks like planting, pruning, mulching, and deadheading mirror landscaping or groundskeeping work.

Greenhouse operations introduce skills in potting, humidity control, and safe tool or machinery use.

**Customer-Facing Experiences**

Some programs incorporate retail or market components to prepare participants for public-facing roles. Examples include:

- Farm stands and market stall
- Mock garden centers or retail shops
- Training in customer service, inventory management, restocking, and basic transactions

These experiences provide a safe environment to build confidence before transitioning to the workforce.

**Holistic Preparation**

While vocational environments support psychosocial development, the primary focus is preparing participants to meet the real demands of employment:

- Endurance and efficiency
- Safe work habits and professionalism
- Confidence in technical and interpersonal skills

Graduates of vocational TH programs leave with both practical skill sets and a realistic understanding of workplace expectations.

**Key Takeaway**

Vocational TH environments thrive when they **mirror real work settings**. By combining technical training with exposure to authentic job conditions, these programs empower participants to transition into employment with competence and confidence.

# Culturally Relevant & Significant Plants in Therapeutic Horticulture (TH)

**Why Culturally Significant Plants Matter**

Plants carry deep cultural, spiritual, and historical meaning. For many communities, specific plants are tied to:

- **Identity and heritage** – Certain plants are woven into traditions, stories, and family practices.
- **Healing and wellness** – Plants may be used in culturally rooted remedies or ceremonies that foster well-being.
- **Connection to land** – Plants often represent ties to ancestral homelands and traditional ecological knowledge.
- **Resilience and belonging** – Caring for culturally meaningful plants can foster comfort, dignity, and a sense of "home" for participants in TH programs.

Integrating culturally relevant plants can help participants feel recognized, respected, and connected in therapeutic settings.

**Best Practices for Practitioners**

**1. Ask, Don't Assume**

- Invite participants to share plants that hold meaning for them.
- Be open to listening and learning about plants from diverse cultural perspectives.

**2. Create Space for Storytelling**

- Allow participants to share personal or family connections with plants.
- Recognize that plants may carry symbolic, emotional, or spiritual meaning beyond their physical qualities.

**3. Honor Diversity**

- Include plants that represent the backgrounds of participants when designing programs.
- Acknowledge differences in cultural uses of the same plant (e.g., food, medicine, ornament, ritual).

**4. Respect Knowledge**

- Recognize that cultural plant knowledge is often passed down through generations.
- Treat shared stories and traditions as gifts, not as resources to be generalized or claimed.

**A Note on Cultural Sensitivity**

It is essential to avoid cultural appropriation in therapeutic horticulture. This means:

- Do not borrow, imitate, or replicate cultural rituals, ceremonies, or plant uses that do not belong to you.
- Do not present another culture's sacred or traditional practices as part of your program unless you have explicit permission and collaboration.
- Always credit and acknowledge the source of cultural knowledge when it is shared.
- When in doubt, seek guidance from community representatives or refrain from using culturally specific practices altogether.

**Key Takeaway**

Culturally significant plants can provide powerful opportunities for connection and healing in TH. Practitioners should integrate them with respect, humility, and care, centering the voices of participants and communities. By doing so, we create inclusive programs that honor heritage while avoiding harm through appropriation.

# Adaptive Tools Guide

**Adaptive Gardening Tools for TH Programs**

Adaptive tools support accessibility, comfort, and safety, enabling participants of all abilities to fully engage in TH activities. By incorporating these tools into program design, practitioners can ensure inclusivity and meaningful participation across physical, sensory, and cognitive needs.

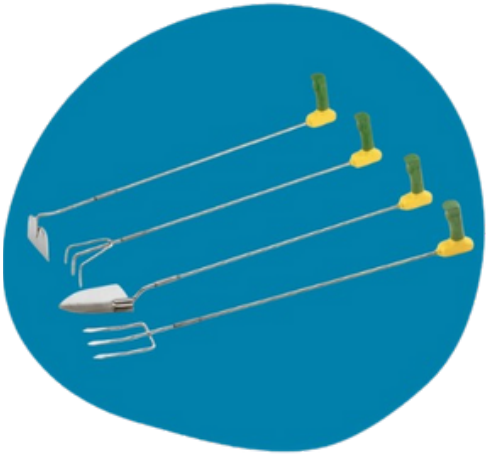
### 1. Seating Options

- **With Backrests & Armrests** – Provide stability and support when lowering or rising to seating surface.
- **Wheeled Seat** – Increases mobility and reduces knee and back strain.
- **Fixed Seating** – Permanent or semi-permanent benches or chairs for stability.
- **Garden Scooter** – Combines mobility with garden-level seating.
- **Garden Kneeler/Seat** – Dual-purpose design for kneeling or sitting while gardening.
- **5-Gallon Bucket with Seat Cushion** – Affordable, portable, multi-purpose option.
- **Garden Rocker** – Allows gentle rocking movement while working and reduces knee strain when crouched/kneeling.

### 2. Gripping Aids

- **Rubber or Foam Cushion Grips** – Improve comfort and grip security.
- **Faucet Grip** – Makes turning spigots easier and reduces wrist strain.
- **Strap Grips & Strap Grip Gloves** – Secure tools to the hand for stability.
- **Angled Handle Support Grip** – Lowers wrist strain during repetitive tasks. Supports frontal approach to garden.
- **Support Cuff** – Stabilizes weak wrists for improved tool control.

### 3. Long Reach Tools



- **Easi-Grip Long Reach Tools** – Reduces bending to ground and increases reach into raised beds/the ground.
- **Scuffle Hoe** – Allows upright or seated weeding.
- **Reacher-Grabber Tool** – Picks up objects without bending.
- **Telescoping Hand Tools** – Adjustable length for multiple users and easy transport.

### 4. Pruning & Cutting Tools

- **Ratcheting Pruners –** Require less force to cut.
- **Electric/Battery-Operated Pruners –** Reduce hand fatigue.
- **Extended Reach Pruners –** For high, low, or deep branches.
- **Long-Handled Lawn Shears –** Upright or low trimming without strain.
- **Cut-and-Hold Pruners –** Hold plant material after cutting for one-handed use.
- **Scissor Mouse & Push-Down Scissors –** Enable low-effort cutting and less exposure to open blade.
- **Long Loop Scissors –** Easier for limited dexterity.

### 5. Kneeling & Rising Devices

- **Foam Kneeling Pads** – Cushion and protect knees.
- **Knee Pads** – Wearable protection for mobility.
- **Standard Garden Kneeler** – Low platform with handles for rising.
- **Power-Assisted Garden Kneeler** – Provides spring-assisted support back to standing.
- **Easy Riser Quad Cane** – Aids stability during transitions.

### 6. Planting & Scooping Tools

- **Trowels –** Available in multiple sizes and materials for comfort function, and ease.
- **Recycled/DIY Tools –** Adapted from common materials for affordability and accessibility.

### 7. Watering Tools

- **Extended Reach Wand –** Waters plants without bending.
- **Thumb-Control Trigger Wand –** Allows one-handed watering with reduced need to apply constant pressure.
- **Squeeze Trigger Wand –** Lightweight and precise. Requires consistent hand pressure.
- **Pump Sprayer –** Reduces repetitive motion strain.
- **Quick Coupler Attachments –** Enable fast hose changes with less twisting.
- **Coil Hose –** Flexible, tangle-free, and easy to transport.

### 8. Seeding Tools

- **Seeding Square –** Guides plant spacing.
- **PVC Pipe Seed Planter –** Enables stand-up or seated seeding.
- **Seed Tape –** Pre-spaced seeds for easier sowing.
- **Seed Dispenser / Seed Sprinkler Bottles –** Provides controlled release.
- **Tweezers –** Assist in handling small or pelleted seeds.
- **Pelleted Seed –** Larger seed size for easier handling.

## Key Takeaway

Adaptive tools make gardening **more accessible, comfortable, and inclusive**. By thoughtfully selecting and incorporating these aids, practitioners ensure that every participant—regardless of ability—can meaningfully engage in TH sessions.

For a detailed visual reference of commonly used adaptive tools in therapeutic horticulture practice, see **Appendix A: Adaptive Tools Reference** at the end of this manual

# Adaptive Techniques

**Purpose**: Adaptations ensure inclusivity and accessibility for participants with diverse abilities, disabilities, and health conditions.

**When to Consider**: Both before and during activities.

**Goal**: Every participant can safely and meaningfully engage in TH.

## 1. Physical Adaptations

Adaptations to the built environment and tools expand access and comfort.

**Examples of Accessible Features:**
- Raised beds, tabletop gardens, accessible path layouts
- Shaded or covered seating areas
- Ramps and/or railings for mobility access
- Automatic doors leading to garden areas
- Flat, wide, unobstructed pathways (no hoses or tools left in walkways)
- Accessible watering systems

**Adaptive Tools:**
- Folding kneeler stools
- Long-handled weeders
- Ergonomic trowels

## 2. Sensory Adaptations

**For Sensory Impairments:**
- Audio descriptions and braille signage
- Large-print labels for plant identification
- Visual cues or color-contrasted tools for low vision
- Sign language interpreters where needed

**For Sensory Processing Challenges/Autism:**
- Sensory-friendly pathways: areas with reduced or increased sensory plants, allowing participants to **choose** how much sensory input they want.
- A balanced variety of sensory stimuli (avoid overwhelming a single sense).

**Examples of Sensory Plants:**
- **Smell:** roses, lilacs, lavender
- **Touch:** lamb's ear, moss

## 3. Communication & Cognitive Adaptations

**Aids and Supports:**

- Communication boards or tablets
- Large-print handouts
- Clear, simple language supported by visual aids
- Yes/No questions paired with visual examples
- Sensory plants as memory triggers for reminiscence

**Group Structure Adjustments:**

- Smaller group sizes for personalized attention
- Clear signage with pictures and large text for wayfinding

4. Example: Adapting a Trivia Activity

**Activity**: 10 true/false questions about strawberries.

- **Seniors (community workshop)**: Provide large-font printed questions for participants to read and discuss.
- **Visually impaired (garden setting)**: Read questions aloud and encourage group discussion.
- **Children (after-school program)**: Place “TRUE” and “FALSE” signs at opposite ends of the room; participants move physically to their answer choice.

### Key Takeaway

Adaptations make TH sessions inclusive, engaging, and meaningful. By planning proactively and responding flexibly in the moment, practitioners ensure that every participant can connect with plants, gardens, and each other in ways that meet their individual needs.

LESSON 06

# HORTICULTURE FOUNDATIONS & CONCEPTS

# Plants Are Like People

When plants are described through human-like traits, systems, and relationships, participants often see reflections of their own lives in the natural world. This perspective fosters stronger emotional connections and makes complex concepts easier to grasp. By relating plants to people, we deepen appreciation for the many ways humans interpret and connect with the plant world.

## Plants Have Names

The way we name plants reflects science, history, and culture.

- **Plant Taxonomy**: Scientific naming based on shared traits and evolutionary relationships.
- **Latin Names**: Often describe plant traits (e.g., angustifolia = narrow leaves, alba = white, officinalis = medicinal use).
- **Eponymous Names**: Honor individuals such as scientists, explorers, or patrons.
- **Indigenous Names**: Reflect cultural, ecological, and spiritual connections.
    - *Example*: Sweetgrass (Wiingashk / Wihkaskwah) – a sacred ceremonial plant in many Indigenous cultures.

Today, recognition efforts include adding Indigenous names in botanical gardens, supporting language revitalization, and community-led renaming initiatives.

## Plants Have Families

Like people, plants belong to families that share characteristics. A few common examples of the more than 400 plant families include:

- **Asteraceae (Daisy Family)**: Sunflowers, daisies, coneflower
- **Lamiaceae (Mint Family)**: Mint, lavender, rosemary, sage
- **Rosaceae (Rose Family)**: Roses, apples, strawberries, cherries
- **Fabaceae (Pea Family)**: Sweet peas, lupines, clover, beans
- **Solanaceae (Nightshade Family)**: Tomatoes, peppers, belladonna, datura
- **Brassicaceae (Mustard Family)**: Broccoli, cabbage, kale, mustard

## Plants Have Homes

- **Native Plants:** Evolved naturally in a specific region without human introduction.
- **Invasive Plants:** Non-native, spread aggressively, and harm ecosystems, economies, or health by outcompeting native species.
- **Naturalized Plants:** Non-native but stable, without causing harm to the ecosystem.

## Plants Have Habits & Behaviors

Plants express different forms and growth patterns:

- **Structural Habits**: Woody (trees, shrubs) vs. herbaceous (soft stems).
- **Seasonal Behaviors**: Deciduous (drop leaves) vs. evergreen (retain leaves).
- **Growth Habits**: Climbing, trailing, vining, upright, mounding, rosette-forming, spreading/colonizing.

## Plants Have Life Cycles

- **Annuals**: Complete their life cycle in one year.
- **Biennials**: Grow vegetatively in the first year, then reproduce in the second.
- **Perennials**: Live three or more years, regrowing annually from their roots.

## Plants Have Sun, Water & Food Preferences

**Sunlight Needs:**

- **Full Sun (6+ hrs/day)**: Tomatoes, lavender
- **Partial Sun/Shade (3–6 hrs/day)**: Lettuce, astilbe
- **Dappled Shade**: Ferns, coral bell
- **Full Shade (<3 hrs/day)**: Hostas, impatiens

**Water Needs:**

- **Low**: Drought-tolerant plants such as succulents, lavender
- **Moderate**: Even moisture—many vegetables, turf grasses
- **Deep/Infrequent**: Soak and dry cycle to build strong roots
- **High**: Constant moisture—canna lilies, marsh marigolds

**Soil & Nutrient Needs:**

- **Sandy**: Fast-draining, low nutrients (e.g., thyme)
- **Clay**: Dense, nutrient-rich, water-holding (e.g., swamp milkweed)
- **Silt**: Moderate drainage/nutrients, prone to compaction
- **Loam**: Balanced sand/silt/clay; ideal for most plants, especially when enriched with compost.

## Plants Have Friends

Plants, like people, thrive in relationships and networks:

- **Companion Planting:** The Three Sisters (corn, beans, squash) support each other's growth.

- **Interconnected Root Systems:** Example: the Pando Aspen Grove, a single organism connected underground.
- **Mycorrhizal Networks:** Fungal networks that allow plants to share resources across ecosystems.

**Key Takeaway**

By presenting plants through human-like traits—names, families, homes, habits, and friendships—we not only teach horticultural foundations but also create opportunities for participants to see themselves reflected in the living systems around them.

# Plant Terms

**Horticulture Terms for Therapeutic Horticulture Practice**

*Disclaimer: This list is not exhaustive. Horticulture is a wide and evolving field, and the terms included here focus on concepts most relevant to TH practice. They are intended as a starting point for building confidence in plant-related language. Practitioners are encouraged to continue learning, especially about native plants and those best suited to their local climates and program settings.*

**Types of Plants**

Plants can be described in many ways — by how long they live, how they store energy, how they behave seasonally, or how they interact with ecosystems. Grouping them by these categories helps highlight similarities and differences, making them easier to understand and explain.

## By Life Cycle

- **Annual**: Completes entire life cycle in one growing season — from seed to flower to seed again — then dies.
  *Example*: petunias, sunflowers, basil.

- **Biennial**: Requires two growing seasons. First year: leaves, stems, roots. Second year: flowers, seeds, death.
  *Example*: parsley, foxglove.

- **Perennial**: Lives for three or more years, going through repeated cycles of growth, flowering, and dormancy. Regrows from the same root system year after year.
  *Example*: lavender, chives.

## By Underground Structures

- **Bulbs:** Underground storage organs made of modified leaves. Store nutrients and energy for regrowth after dormancy.
  *Example*: tulips, onions.

- **Corms:** Short, thickened underground stems that store nutrients. Solid inside (unlike layered bulbs).
  *Example*: crocus, gladiolus.

- **Rhizomes:** Horizontal underground stems that spread and reproduce vegetatively. Store nutrients and allow colonization.
  *Example*: ginger, bamboo, iris.

- **Tubers:** Enlarged underground stems or roots that store nutrients and produce buds (“eyes”) that grow into new plants.
  *Example*: potatoes, sunchokes.

## By Seasonal Behavior

- **Deciduous:** Shed leaves seasonally (often in autumn), enter dormancy, and regrow in spring.
  *Example*: maple.

- **Evergreen:** Retain leaves year-round, replacing them gradually rather than all at once.
  *Example*: pine.

## By Water & Resource Use

- **Water-Wise:** General term for plants and practices that use water efficiently, often requiring less irrigation once established.

- **Drought-Tolerant:** Adapted to withstand dry conditions, surviving periods of limited water without serious harm.
  *Example*: agave, lavender.

## By Ecological Role

- **Native:** Species that occur naturally in a region without human introduction.

- **Invasive:** Non-native species that spread aggressively, often displacing natives and harming ecosystems.
  *Example*: Scotch broom, kudzu.

- **Weeds:** Plants growing where they are not wanted, often competing with desired plants for resources. (A subjective term.)

- **Pollinator-Friendly:** Provide nectar, pollen, or shelter that supports bees, butterflies, birds, bats, and other pollinators.
  *Example*: milkweed, black-eyed Susan.

## Beyond Plants: Fungal Networks

- **Mycelium**: The underground, thread-like network of a fungus. Functions like the “root system” of fungi, breaking down organic matter and often forming symbiotic relationships with plants through mycorrhizal networks.

# Plant Toxicity Considerations

**Poisons vs. Toxins in TH Programming**

Understanding plant toxicity is essential for safe and inclusive TH practice. While “poison” and “toxin” are often used interchangeably, they have distinct meanings.

- **Poison**: Any natural or manmade substance that can cause illness or death if ingested or absorbed.
- **Poisonous**: A term describing something capable of causing illness or death when taken into the body.
- **Toxin**: A naturally occurring organic substance produced by bacteria, animals, or plants that is harmful or lethal.
- Toxicity: The degree to which a toxin is harmful.

Note: All toxins are poisons, but not all poisons are toxins.

**Common Exposure Pathways**

Toxic reactions can occur through several routes:

- Skin Contact
- Inhalation
- Ingestion
- Internal Absorption

**Common Reactions in TH Settings**

The most frequent toxic reaction encountered in TH programming is dermatitis (contact rash). Plants such as poison ivy, poison oak, and poison sumac produce *urushiol oil*, which can cause severe irritation. Exposure may occur through direct plant contact, contaminated tools or clothing, contact with pets, or inhalation of particles if plant matter is burned.

## Factors Influencing Toxic Response

The severity of a toxic reaction depends on multiple variables:

- **Age & Weight**: Children and smaller individuals are generally more vulnerable.
- **Growing Environment**: Soil, water, light, and climate can affect how much toxin a plant produces.
- **Plant Growth Stage**: Toxicity can vary between seedlings, mature plants, and dormant phases.
- **Amount Ingested**: Larger quantities typically result in stronger reactions.
- **Plant Part**: Toxins may concentrate in specific parts (e.g., seeds, roots, or leaves).

*Key Concept*: Toxicity Threshold — the minimum amount of toxin needed to produce symptoms.

## Toxicity Classification Systems

There is no universal system for classifying plant toxicity. Categories can vary widely across general references, medical guides, and veterinary resources. For best practice, TH practitioners should **cross-reference multiple reliable sources** when assessing plant safety.

**Examples of classification systems include:**

**General classification guideline examples:**

1. Extremely Toxic – Serious illness/death
2. Moderately Toxic – Minor to serious illness
3. Minimally Toxic – Minor discomfort

**Specialized classification guideline examples:**

1. Poisonous to eat
2. Poisonous on contact
3. Causes photosensitization
4. Produces airborne allergies

- **Very Low / Low Risk (1–2):** Plant may be used with appropriate precautions.
- **Moderate / High Risk (3–4):** Safer alternatives should be selected.

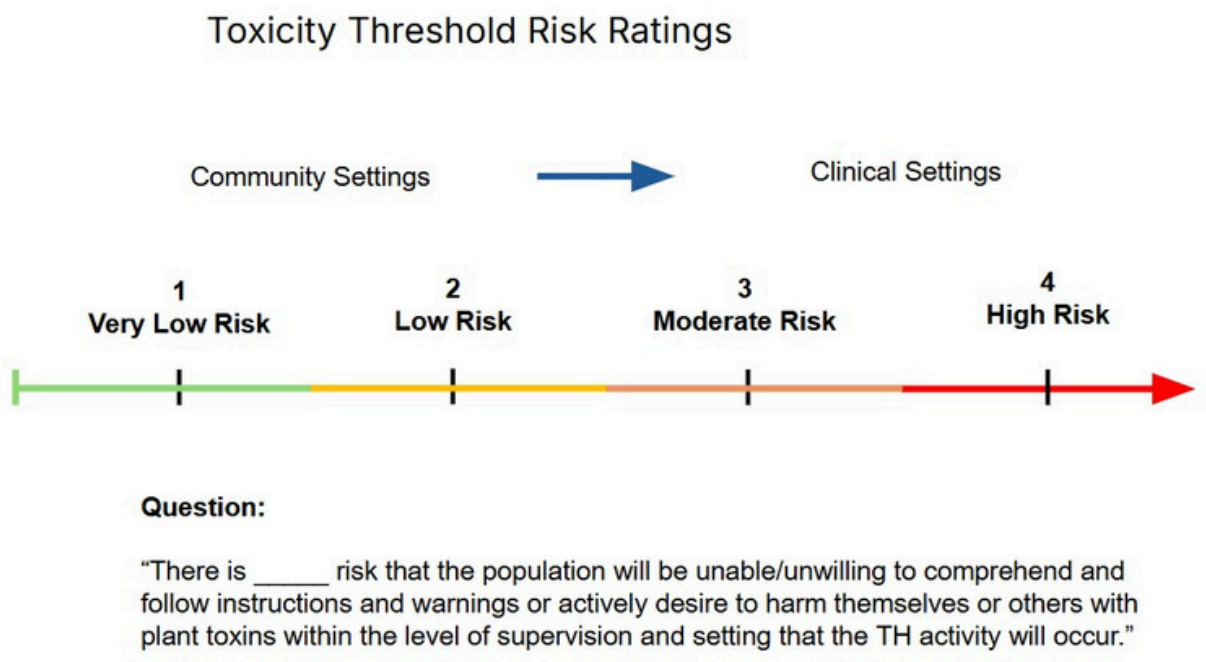
## Context Matters

- **Community Programs**: Risk often lower (participants generally more independent).
- **Clinical Programs**: Risk often higher (due to cognitive impairments, behavioral challenges, or limited supervision).

Rating Scale
1 – Very Low Risk
2 – Low Risk
3 – Moderate Risk
4 – High Risk

## Purpose of the Tool

- Not a checklist, but a decision-making framework.
- Encourages context-specific judgment for each plant and setting.
- Promotes both safety and therapeutic value in TH practice.




### Preparing for Plant Toxin Exposure

Even with thoughtful plant selection and careful planning, exposure to plant toxins can occur in TH programs. Preparing for this possibility ensures that practitioners respond quickly, calmly, and effectively, keeping participants safe while reinforcing program credibility.

## Exposure Prevention

**Education**
- Research and identify plants present in and around program areas.
- Teach participants simple risk awareness strategies.

**Protective Clothing**
- Encourage long sleeves, closed-toe shoes, gloves, and goggles when appropriate.

**Memorable Adages**
- “Leaves of three, let it be.” *(Poison ivy, oak, sumac)*
- “Hairy vine, no friend of mine.” *(Poison ivy)*
- “Berries white, take flight.” *(White berries often indicate toxic species)*

## Be Prepared for Exposure

**Anticipate Symptoms**
- Develop a quick-reference list of possible symptoms (e.g., rash, swelling, nausea, respiratory distress).
- Use reliable sources such as poison control centers or medical plant guides.

**Know Your Resources**
- Record and post local poison control center numbers in visible, accessible locations.
- Share resource information with staff and volunteers.

**Develop a Crisis Plan**
- Establish a written protocol that specifies:
  - Who to notify
  - Where to seek medical support
  - Immediate on-site steps (first aid, safe removal of material)
- Ensure staff are trained and confident in following this plan.

**Key Takeaway**

Preparation protects participants, supports staff confidence, and reinforces professionalism—even if an exposure event never occurs.

## Responding to Plant Toxin Exposure

When exposure happens, your response influences both participant safety and group trust.

**Stay Calm**
- Maintain composure; a calm presence reassures participants and allows for clear decision-making.

**Remove the Source**
- Gently remove plant material from the mouth, skin, or clothing.
- Take care not to spread oils, sap, or residue during removal.

**Identify and Document**
- Identify the plant if possible and note the type/extent of exposure (amount ingested, area of contact).
- This information is critical for medical professionals.

**Seek Professional Guidance**
- Call poison control or emergency services immediately for moderate or severe exposures.
- Follow their instructions precisely.
- If safe, collect a plant sample for diagnosis.

**Report the Incident**
- Follow site reporting protocols.
- Document details, notify supervisors, and review safety measures to prevent future occurrences.

# Sensory Plants

**Definition**

Sensory plants are chosen for their ability to stimulate one or more of the five senses, deepening engagement, supporting memory, and promoting well-being in TH programs.

## Sensory Elements

**Smell:** Lavender, hyacinth, lilac, roses, mock orange 

**Taste:** Mint, tomatoes, berries, chamomile, carrots (ensure safe consumption) 

**Touch:** Lamb's ear, bunny tails, moss, strawflowers 

**Sound:** Ornamental grasses in wind, pollinators around fuchsia, water features, wind chimes 

**Sight:** Coleus (color contrast), dinner plate dahlias (large blooms), ornamental alliums 

## Why Sensory Plants Matter in TH

- **Multi-sensory engagement:** Involves several senses at once, creating deeper connections with nature.
- **Health benefits:**
  - *Physical* – fine motor skill development, hand–eye coordination
  - *Cognitive* – memory stimulation, focus, and attention
  - *Emotional* – relaxation, mood support, and reduced anxiety
- **Storytelling & memory recall:** Scents and tastes spark personal memories and invite conversation.
- **Active & passive participation:** Sensory plants benefit participants whether they are hands-on or observing quietly.
- **Mindful connection:** Encourages grounding and present-moment awareness.
- **Positive emotional responses:** Promotes joy, calm, and comfort.
- **Skill development:** Supports tactile learning (pinching, pruning, transplanting) and enhances spatial perception.

## Tips for Incorporation

- Provide **variety** across senses—avoid overemphasizing one sense to prevent overload.
- Plan for **seasonal coverage**—use fresh, dried, or preserved materials to extend use year-round.
- Ensure **accessible placement**—locate plants where all participants can comfortably reach and interact.
- Add **non-plant sensory features**—water elements, wind chimes, hummingbird feeders.
- Use sensory plants in **diverse activities**—herb guessing games, herbal teas, scavenger hunts, potpourri, birdsong ID, culinary activities (e.g., lilac lemonade, garden salsa).

# Soil & Horticulture Terms

**Soil** is vital in horticulture because it provides essential nutrients, retains water, and supports root systems. These factors ultimately determine the success of crops and ornamental plants. The following terms highlight foundational concepts useful in TH practice.

### Compost

Decomposed organic matter made from yard waste, food scraps, and other natural materials. Compost is nutrient-rich and full of beneficial microorganisms, improving soil fertility, structure, and water retention while reducing reliance on synthetic fertilizers.

### Potting Soil

A blended growing medium formulated for use in containers. Usually contains a mix of organic matter (peat moss, bark, compost), mineral additives (perlite, vermiculite, sand), and nutrients to provide aeration, drainage, and moisture retention.

### Soil Drainage

The soil's ability to move excess water away from plant roots. Good drainage prevents root rot and fungal disease; poor drainage can suffocate roots and hinder growth. Influenced by soil texture, structure, and organic matter.

### Seed Starting Mix

A lightweight, fine-textured, often sterile medium designed for germinating seeds. Retains moisture while allowing airflow, minimizing risk of damping-off disease. Commonly made of peat moss or coir, perlite, and vermiculite, with little to no fertilizer.

### Soil pH


A scale (0–14) measuring soil acidity or alkalinity, with 7 neutral. pH affects nutrient availability and microbial activity. Most plants prefer slightly acidic to neutral soils (6.0–7.0), though some (e.g., blueberries) require more acidic conditions.

**Mulching**

Covering soil with organic or inorganic material (straw, bark, gravel, fabric, leaves) to conserve moisture, suppress weeds, regulate soil temperature, and prevent erosion. Organic mulches enrich soil as they decompose.

**Soilless Gardening**

Plant cultivation using mediums other than soil, such as sand, perlite, rockwool, or nutrient-rich water. Commonly used in hydroponics, aquaponics, and aeroponics for greater control over nutrients and conditions.

**Hydroponics**

A soilless system where roots are immersed in, or periodically exposed to, a nutrient-rich water solution. Promotes rapid growth and efficient nutrient uptake, often in controlled environments like greenhouses.

**Aquaponics**

A closed-loop system combining hydroponics with aquaculture (raising fish). Fish waste provides nutrients for plants, while plants filter and purify water for the fish.

**Aeroponics**

A soil-free growing method where roots are suspended in air and misted with nutrient-rich water. Maximizes oxygen exposure to roots and is often used in research or advanced greenhouse systems.

## Horticultural Terms:

These terms highlight common practices in horticulture that are especially relevant to TH programming. Understanding them helps practitioners design safe, accessible, and effective plant-based activities while fostering ecological responsibility.

### Dividing

Splitting mature plants—often perennials—into smaller sections that can be replanted. Division rejuvenates older plants, prevents overcrowding, and serves as a method of propagation.

### Propagating

Reproducing new plants from existing ones through seeds, cuttings, layering, grafting, or division. Propagation may be:

- **Sexual**: via seeds, producing genetic diversity.
- **Asexual/Vegetative**: via cuttings or divisions, producing clones of the parent plant.

### Hardiness Zone

A geographic classification system indicating a region's average minimum winter temperature. Used to guide plant selection by predicting whether a species can survive the cold of that area. (The USDA Hardiness Zone Map is most widely used in North America.)

### Deadheading

Removing faded or spent flowers from plants. Deadheading encourages continued blooming, improves appearance, and prevents unwanted self-seeding.

### Pruning

A method of growing plants without synthetic pesticides, herbicides, or fertilizers. Organic practices emphasize soil fertility, biodiversity, ecological health, and sustainability, often relying on compost and crop rotation.

**Organic**

A method of growing plants without synthetic pesticides, herbicides, or fertilizers. Organic practices emphasize soil fertility, biodiversity, ecological health, and sustainability, often relying on compost and crop rotation.

**Tilling**

Mechanically turning or loosening soil to prepare for planting. While it can improve aeration and incorporate organic matter, over-tilling may harm soil structure, disrupt microbes, and increase erosion.

**No-Till Gardening**

An approach that minimizes or eliminates soil disturbance. Instead of tilling, gardeners use mulching, composting, and cover cropping to build healthy soil, conserve moisture, and support long-term ecological balance.

**Sustainability in TH**

Sustainable horticulture minimizes environmental harm, conserves resources, and supports ecological balance. Many practices above (e.g., no-till, seed saving, native plants) reflect sustainable approaches. TH practitioners are encouraged to integrate sustainability into both program design and participant education.

## Seed Terms

Seeds are the starting point of nearly every plant we grow. They hold the potential for life, carrying the genetic blueprint and energy needed to sprout, adapt, and thrive. Understanding key seed-related terms helps practitioners guide germination, growth, and sustainable plant practices.

**Germination**

The biological process by which a seed begins to grow and develop into a seedling. Triggered by conditions such as moisture, warmth, and oxygen, germination marks the awakening of the seed's embryo.

**Stratification**

A pre-germination treatment in which seeds are exposed to a period of cold and moisture to mimic winter conditions. This process breaks seed dormancy and triggers successful germination in many perennials and trees.

**Sowing**

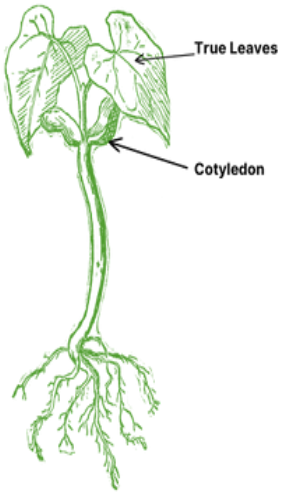
The act of planting seeds into soil, seed trays, or growing media—either by broadcasting them broadly or placing them individually at specific depths and spacing.

**Transplanting**

Moving young seedlings or established plants from one location to another—often from starter pots or trays into larger containers or garden beds. This process supports continued growth and adaptation to new environments.

**Hardening Off**

A gradual process of acclimating indoor- or greenhouse-grown seedlings to outdoor conditions. This involves exposing them to sunlight, wind, and fluctuating temperatures over several days to reduce transplant shock.




**Cotyledon**
The first leaf or pair of leaves that emerge from a germinating seed. Cotyledons provide stored energy for the seedling until it can produce its own food through photosynthesis.

**True Leaves**
The first set of leaves that resemble the mature plant's foliage, appearing after the cotyledons. True leaves signal that the seedling is beginning independent growth and photosynthesis.

**Self-Seeding**

When plants naturally drop seeds that germinate without human intervention, creating new growth in subsequent seasons. Examples include calendula, dill, and poppies, which often reappear year after year.

**Seed Saving**

The practice of collecting, cleaning, and storing seeds from mature plants for future planting. Seed saving promotes sustainability, biodiversity, and cost efficiency, while helping preserve heirloom varieties.

**Damping Off**

A fungal disease affecting seedlings, often caused by overwatering or poor air circulation. Symptoms include sudden wilting, rotting at the soil line, and collapse of young seedlings.

**Bottom Watering**

A watering method where containers are placed in a tray of water, allowing roots to absorb moisture from below. This reduces the risk of fungal disease and encourages deep root growth.

**Bolting**

The premature production of flowers and seeds, usually caused by stress such as high temperatures or drought. Bolting often reduces the edible quality of crops like lettuce, spinach, or cilantro.

# Benefits of Seed Starting

Starting seeds is a rewarding way to grow plants while creating meaningful opportunities for participant engagement. With patience and care, seeds can grow into thriving plants that foster pride, connection, and learning.

## Benefits for TH Programs

**Cost-Effective**

Seeds are far less expensive than purchasing seedlings, making them a budget-friendly option for ongoing programs.

### Expanded Variety

Nurseries often carry a limited selection of plant starts. By starting seeds, programs can grow unique and engaging varieties—such as lemon cucumbers, peppermint stick zinnias, cucamelons, red zebra tomatoes, or strawberry mint—that participants may have never encountered before. Choosing crowd favorites or unusual options helps spark curiosity and excitement.

### Early Engagement

Seed starting can begin weeks before outdoor gardening is possible, extending the growing season and giving participants an earlier sense of purpose and connection. Indoor seed trays provide opportunities for regular involvement in watering, maintenance, and transplanting. For example, in one complex care program, seed starting in early March helped participants stay engaged and motivated during the final cold weeks of winter.

### Pride and Accomplishment

Watching a small seed grow into a mature plant provides a sense of ownership and continuity across the season. For one new mother-daughter gardening pair, sowing seeds together created powerful learning moments—from thinning crowded rows of radishes to harvesting abundant food later in the summer. Their pride in having grown their own food carried into shared meals and new recipes at home.

## How to Start Plants from Seed

Starting seeds is a hands-on, accessible activity that offers participants meaningful engagement while preparing for a productive gardening season. Below is a step-by-step guide to successful seed starting for TH programs.

### Adaptive Tips for Seed Starting

- **Choose seed size wisely**: Larger seeds (peas, beans, squash, sunflowers, nasturtiums) are easier to handle and well-suited for participants with low vision or reduced dexterity, including children.
- **Support small-seed handling**: Tools like tweezers, seed dials, or vacuum precision seeders make planting tiny seeds (onions, lettuce, pansies, thyme) more accessible.
- **Seed viability testing**: Turn testing into an interactive activity—ask participants to predict how long seeds will last, compare against reference charts, and test germination rates. A simple float test (non-viable seeds float, viable seeds sink) provides an engaging hands-on experiment.

## Managing Expectations

**Seed starting** is both rewarding and unpredictable. Most seeds have a germination rate of 70–90%, but even under ideal conditions, not every seed will sprout.

- Normalize setbacks: Emphasize that gardening has no failures—only opportunities to learn. When seeds don't sprout, invite participants to reflect: *What did we learn? What might we try differently next time?*
- Encourage growth mindset: Frame challenges as part of the gardening journey, supporting resilience and problem-solving skills.
- Plan ahead: Sow extra seeds when possible, and have backup starter plants available to ensure program continuity and participant success.

## Seed Starting Process

### Timing

- Check seed packet for:
  - Optimal start date
  - Germination rate
  - Harvest date
  - Depth guide (often with ruler illustration)
- General rule: Start seeds indoors 4–6 weeks before last frost date.

### Containers

- Must be clean and have drainage holes.
- Options: Plastic cups, egg cartons, seed-starting trays with cell inserts.
- Reused pots: Sanitize before use.

### Soil

- Use high-quality seed-starting mix or DIY (vermiculite + peat moss + perlite).
- Should be nutritious and well-draining.

### Planting

- Fill containers to the top with moist seed-starting mix.
- Plant to recommended depth on seed packet.
- Avoid over-planting—follow spacing instructions.
- Tip: Remind participants one tiny seed can grow into a large plant.

### Labeling

- Label with plant name and date.
- Options: Purchased plant labels, cut plastic from food containers, or participant-made labels.
- Label-making can engage participants not interested in direct planting.

### Location & Light

- Keep seeds in warm, moist environment.
- Provide 14+ hrs./day of sunlight or use grow lights.

**Watering**
- Keep soil moist but not soggy.
- Water from the bottom to avoid rot/mold.

**Air Circulation**
- Promotes healthy growth.
- Prevents fungal diseases

**Thinning**
- **Purpose**: Prevents overcrowding so remaining plants can grow strong.
- **When**: Wait until seedlings develop first true leaves (second leaf set after cotyledons)**.**
- **How:**
  - Gently pull seedlings above the soil line **or** snip at the base with small sharp scissors.
  - Follow spacing recommendations on seed packet/plant label.
  - Remove seedlings within the spacing zone of a stronger neighbor.
- **Aftercare**: Water gently to help seedlings recover from stress.

**Transplanting**
- Move seedlings to larger containers or outdoors once size is appropriate.

**Hardening Off**
- Gradually acclimate seedlings to outdoor conditions before planting outside.

**Engagement Benefits**
- Earlier garden start and weeks of indoor activity before outdoor planting.
- Involves participants in sowing, watering, maintenance, and transplanting.
- Builds sense of pride—watching a full-grown plant emerge from a tiny seed.
- Supports program continuity and provides opportunities for shared successes.

**Adaptive Tips**
- **Larger seeds** (peas, beans, squash, sunflowers, nasturtiums) are easier to handle for participants with visual or motor impairments.
- **Smaller seeds** (onions, lettuce, pansies, thyme) can be managed with tools such as tweezers, seed dials, or vacuum precision seeders.
- Suitable for participants with Parkinson’s, arthritis, multiple sclerosis, stroke recovery, or limited dexterity.

**Seed Viability Testing**
- Ask participants to guess how many years seeds are viable—then confirm by checking references.
- Predict how many of 10 seeds will germinate, record results, and compare to actual germination rates.

# Seed & Plant Donations

Donations of seeds, plants, and garden supplies can be a powerful way to stretch program budgets, expand opportunities, and strengthen community connections. With a thoughtful approach, donation programs can provide both practical resources and relationship-building benefits.

**Benefits of Donations**

- **Cost-effective** – Reduces expenses, freeing up funds for staffing, accessibility tools, or other program needs.
- **Increased variety** – Access to diverse materials keeps programming fresh and engaging.
- **Program expansion** – More supplies = more participants, bigger gardens, and enhanced environments.
- **Community involvement** – Builds connections with local gardeners, businesses, and volunteers.

**Common Garden Supplies to Request**

- **Seeds**
  - Many seed companies offer donation programs for non-profits and community groups.
  - Other sources: seed saving, community seed swaps, seed libraries.
  - Example: During a school garden revitalization project with zero budget, local companies and home gardeners donated all necessary seeds.

- **Cut Flowers**
  - Sources: florists, funeral homes, organizations like Rebloom (Canada).
  - Community programs: master gardeners growing flowers for donation.
  - Impact: Adds beauty and joy to programs—especially valuable where fresh flowers are costly.

- **Plants**
  - Garden centers and nurseries often donate annuals and perennials.
  - Donation letters should specify plants and quantities (e.g., “6 sun-loving perennials, 3 shade-loving perennials, 6 herb plants”).
  - Existing customer relationships often increase success.

- **Soil**
  - Vendors may donate bulk soil or provide free/discounted delivery.
  - Volunteers with trailers can assist with transport.
  - Garden stores may donate bagged soil—ideal for indoor or smaller programs.

**Tips for Requesting Donations**

1. **Tell your story** – Share your mission, goals, and who you serve.
    - *Example*: Highlighting work with Veterans often resonates strongly.
2. **Highlight charitable status** – If you can issue tax receipts, state this clearly.
3. **Explain direct impact** – Describe how donations will benefit participants.
4. **Be specific** – List exactly what you need (type, quantity, purpose).
5. **Use professional presentation**:
    - Letters: on organization letterhead.
    - Emails: from an official account with a professional signature.
6. **Follow up** – If no response in two weeks, send a polite reminder.
7. **Expect some rejections** – Don't be discouraged; persistence pays off.
8. **Host donation drives** – Especially during seasonal plant division (spring).
    - Advertise in local papers, community boards, or "buy nothing" groups online.
9. **Acknowledge and thank donors** – Send personalized thank-yous, invite visits, or share photos showing their impact.

# Tool Safety & Storage

Proper tool management is a core component of safe and effective TH practice. By considering selection, containment, organization, and tracking, practitioners can reduce risk, protect participants, and keep programming smooth and efficient.

**Four Core Safety Factors for Tool Management**

**1. Tool Selection**

- **Environment restrictions** – Some settings (schools, hospitals, secure facilities) prohibit sharp or heavy tools. Always confirm site-specific rules before use.
- **Participant needs** – Match tools to participants' physical, cognitive, and behavioral abilities. Choose adaptive tools when appropriate.
- **Intentional collection** – Keep only tools that are actively used. A smaller, purposeful collection reduces clutter, makes tracking easier, and ensures tools remain safe and functional.

**2. Tool Containment**

- **Location security –** Locked storage prevents unauthorized access, minimizes theft or accidental borrowing, and protects against damage.
- **Fixed vs. mobile storage** – Programs may use:
  - *Fixed storage*: sheds, closets, greenhouse bays.
  - *Mobile storage*: carts, wagons, wheelbarrows, or vehicles. Some mobile options may lock; others rely on supervision.

**3. Tool Organization**

- **Logistics** – Store tools thoughtfully. Limit quantities, balance weight for safe lifting, and keep high-use tools easily accessible.
- **Efficiency & safety** – Use clear labels, color coding, or stenciled outlines to indicate where each tool belongs. This reduces confusion and supports quick, safe cleanup.

**4. Tool Tracking**

- **Accurate counts** – Establish a check-in/check-out system before and after each session.
- **Visual confirmation** – Assign specific storage slots or hooks for each tool so missing items are quickly noticed. Checklists or tool shadow boards can be especially effective.

**Key Takeaway**

Consistent tool safety and storage practices keep participants safe, reduce replacement costs, and foster a professional, organized environment for TH programming.

LESSON 07

# COURSE CONCLUSION

# What Now?

**Congratulations** on completing this course. You've invested time, energy, and reflection into your learning, and that commitment is a significant step forward in your journey as a therapeutic horticulture practitioner. Each concept you've explored here strengthens the knowledge and confidence you bring into your work, and we hope you feel proud of what you've achieved.

This is just the beginning. Completing this course qualifies you to continue into any of the advanced courses in the certificate pathway. By completing those courses, you can earn the TH Facilitation Certificate, the TH Program Development and Management Certificate, or both. If you complete both certificates, you'll earn the full Therapeutic Horticulture Certificate which recognizes comprehensive training in foundational knowledge, facilitation skills, and program development.

Alongside the certificate pathway, you'll also find a wide selection of thematic learning opportunities and a growing suite of short, targeted mini-courses that focus on specific skills and practice themes.

Until then, the GrowTH Network is here to support you with its activity database, resource library, practitioner support calls, and professional development events. We also encourage you to stay connected through Instagram, YouTube, and LinkedIn, where you'll find fresh ideas, free resources, and stories from our community.

On behalf of our teaching team, thank you for your dedication to this field and the work you're doing in your communities. We can't wait to see how you apply what you've learned, and **we look forward to supporting your growth every step of the way.**

# Glossary of Terms

**Accommodations**
Adjustments or modifications made to ensure activities, tools, or environments are accessible to all participants.

**Acquired Brain Injury (ABI)**
A brain injury caused by trauma (e.g., concussion) or non-traumatic events (e.g., stroke, seizure disorder). May affect mobility, cognition, and emotions.

**Activity**
A task or exercise that involves working with plants, gardening, or interacting with nature to achieve therapeutic benefits.

**Adaptive Tools**
Specialized or modified gardening tools that increase accessibility for individuals with limited mobility or strength.

**Active Engagement (TH context)**
Direct participation in TH gardening tasks, planting, harvesting, or other hands-on activities.

**Aeroponics**
A method of growing plants where roots are suspended in air and misted with nutrient-rich water.

**Annual**
Plants that complete their life cycle in one growing season, then die. Examples: sunflowers, basil, petunias.

**Asking Open-Ended Questions**
Facilitation technique that prompts reflection and elaboration beyond yes/no answers.

**Asset-Based Community Development (ABCD)**
An approach to community development that focuses on identifying and mobilizing strengths and resources within a community.

**Attention Restoration Theory**
Psychological theory suggesting natural environments restore focus through gentle, non-demanding stimuli.

**Aquaponics**
A growing technique that combines hydroponics and aquaculture, where fish waste provides nutrients and plants filter the water.

**Biennial**
Plants that grow leaves the first year, flower and set seed in the second, then die. Examples: parsley, foxglove.

**Biophilia Hypothesis**
The idea that humans have an innate need to connect with nature and other living things.

**Body Scan**
A guided mindfulness technique encouraging awareness of physical sensations throughout the body.

**Bolting**
Premature flowering and seeding of plants, often caused by heat or stress.

**Bottom Watering**
Watering plants by letting soil absorb water from a tray beneath the pot.

**Bulbs**
Underground storage organs made of fleshy scales that grow into new plants.

**Clay**
A fine-textured soil type that retains water and nutrients but drains poorly.

**Client-Centered Care**
Approach that prioritizes the individual's needs, preferences, and goals in treatment.

**Clinical Program Model (TH)**
TH model focused on the achievement of specific, measurable health and wellness goals within clinical settings. Documentation and evaluation are often employed.

**Closed-Ended Activity**
A task completed in a single session, as opposed to successive activities that build over time.

**Compost**
Decomposed organic matter that enriches soil fertility, structure, and water retention.

**Congruence**
The therapist's authenticity and transparency in interactions with participants.

**Corms**
Short, swollen underground stems that store nutrients.

**Cotyledon**
The first leaf or pair of leaves that emerge from a germinating seed, providing stored energy.

**Cultural Humility**
An approach that values openness, respect, and learning in cross-cultural interactions.

**Cultural Safety**
An approach that ensures cultural identity, values, and practices are respected and protected within therapeutic practice.

**Damping Off**
A fungal disease that causes seedlings to collapse at the soil line.

**Deadheading**
Removing spent flowers to encourage continued blooming and reduce unwanted self-seeding.

**Deciduous**
Trees or shrubs that shed leaves seasonally, typically in autumn.

**Dementia**
A group of conditions marked by decline in memory, reasoning, or other thinking skills that affect daily functioning.

**Developed Sites**
Settings with infrastructure, staff, funding, a defined mission, and identified populations, where TH can be integrated into existing systems.

**Disability**
A condition that limits a person's movements, senses, or activities in daily life.

**Dividing**
Splitting mature plants into smaller sections to rejuvenate growth or propagate new plants.

**Domains of Wellness**
Six areas TH supports: physical, emotional, cognitive, social, spiritual, and vocational.

**Drought-Tolerant Plants**
Species adapted to survive extended dry conditions. Examples: lavender, Russian sage.

**Ecopsychology**
Perspective linking mental health with ecological health and connection to nature.

**Emotional Safety**
A participant's sense of being respected, accepted, and free from judgment or harm in a group or activity setting.

**Empathy**
The therapist's/practitioner's ability to understand and validate participants' feelings.

**Empowerment Theory**
Framework emphasizing inclusion, self-determination, and shared power.

**Environmental Psychology**
The study of how people interact with and are affected by their surroundings, including natural environments.

**Evidence-Based Outcome**
A measurable result that is supported by research and documented effectiveness.

**Evergreens**
Trees or shrubs that retain leaves year-round. Example: pine trees.

**Facilitation**
The practitioner's role in guiding activities, ensuring safety, and fostering engagement.

**Forms and Surveys**
Tools for gathering participant information such as health, goals, and preferences.

**Fractal Patterns**
Repeating natural shapes found in plants, shown to reduce stress and promote relaxation.

**Germination**
The process of a seed sprouting into a seedling, triggered by warmth, moisture, and oxygen.

**Goal (treatment)**
A target outcome identified in a treatment or therapeutic plan.

**Group Dynamics Theory**
Theory on how group behavior and social interaction influence learning and growth.

**Hand Over Hand Technique**
A facilitation method where the practitioner gently guides a participant's hands to complete a task when otherwise, they wouldn't be able to complete the task independently.

**Hardening Off**
Gradually acclimating seedlings to outdoor conditions before transplanting.

**Hardiness Zone**
A classification system indicating average minimum winter temperatures for plant survival.

**Horticultural Therapy (HT)**
A clinical practice facilitated by registered horticultural therapists that utilize plants and nature-based activities to work towards treatment goals. Documentation and evaluation of participant progress is required.

**Human Development Theory**
A framework describing growth and change across the lifespan in areas such as physical, cognitive, and social development.

**Hydroponics**
A method of growing plants without soil, using a nutrient-rich water solution.

**Inclusivity**
The practice of ensuring all individuals feel welcomed, valued, and able to participate fully.

**Invasive Plants**
Non-native species that spread aggressively and disrupt ecosystems.

**Invisible Disabilities**
Conditions not immediately visible, such as chronic pain, depression, or autoimmune diseases.

**Intellectual and Developmental Disability (IDD)**
A group of conditions involving limitations in intellectual functioning and adaptive behavior.

**Least Restrictive Environment (LRE)**
Support practices enabling maximum participation and independence while ensuring safety.

**Life Course Theory**
A framework emphasizing that health outcomes are shaped by experiences across the lifespan.

**Likert Scale**
A rating scale commonly used in surveys to measure attitudes, agreement, or frequency.

**Loam**
Soil composed of roughly balanced proportions of sand, silt, and clay, considered ideal for most plants.

**Long-Term Goals (LTG)**
Broad, high-level objectives (e.g., improving confidence or reducing isolation).

**Mulching**
Covering soil with organic or inorganic material to conserve moisture and regulate temperature.

**Mycelium**
The vegetative network of fungi that absorbs and distributes nutrients.

**Native Plants**
Species that naturally occur in a region without human introduction.

**Naturalizing**
Process where plants spread and establish themselves without human input.

**Nature Metaphors**
Symbolic comparisons between plant life cycles and human experiences.

**No-Till Gardening**
An approach minimizing soil disturbance by using mulches, composting, and cover crops.

**Non-Verbal Cues**
Gestures, expressions, or body language that show attentiveness and support.

**Observation**
The purposeful watching or recording of participant behaviors and interactions.

**Organic**
A holistic approach to cultivation that avoids synthetic chemicals and emphasizes ecological balance.

**Outcome Measurement**
Methods of documenting change and progress in TH programs.

**Participant Assessment**
The process of learning about individuals' interests, abilities, and needs for program design.

**Passive Engagement (TH context)**
Indirect participation such as observing, smelling, or listening to plants and nature with or without the assistance of a facilitator.

**Perennial**
Plants that live and regrow for multiple seasons (longer than 3 years).

**Person-Centered Care**
Approach placing individuals at the center of decisions; emphasizes respect and empowerment. Widely accepted term in human services and medical settings.

**Physical Safety**
Creating conditions that minimize risk of harm during activities and in the environment.

**Plant Life Cycle**
The stages of growth from seed germination to maturity, reproduction, and death.

**Poisonous**
Describes a plant or substance that can cause harm to humans or animals if ingested, inhaled, or touched. The severity depends on the type of toxin, the amount, and the individual's sensitivity.

**Pollinator-Friendly Plants**
Species that provide food and habitat for bees, butterflies, and hummingbirds

**Pollinator Garden**
A garden planted specifically to attract and support pollinators like bees and butterflies.

**Potting Soil**
A blended growing medium formulated for use in containers.

**Pruning**
Selective cutting of plant parts to improve health, productivity, or shape.

**Program**
A series of structured TH sessions delivered over a defined period.

**Program Models**
Three primary TH program types: Community, Clinical, and Vocational.

**Propagating**
Reproducing plants through seeds, cuttings, division, or grafting.

**Rhizomes**
Horizontal underground stems that store nutrients and spread plants.

**Sand**
A coarse-textured soil type that drains quickly but retains few nutrients.

**Seed Saving**
The practice of collecting and storing seeds from plants for future sowing, preserving genetic diversity.

**Seed Starting Mix**
A sterile, lightweight growing medium designed for germinating seeds.

**Self-Seeding**
Plants dispersing their own seeds, allowing them to germinate naturally.

**Sensory Garden**
A garden designed to stimulate multiple senses such as sight, smell, touch, taste, and hearing.

**Sensory Impairment**
A limitation in one or more senses, such as vision or hearing loss.

**Sensory Integration Theory**
A theory that explains how the brain processes and integrates sensory information to support behavior and learning.

**Sensory Plants**
Plants selected for their ability to engage senses like smell, touch, taste, and sound.

**Session**
A structured time period (often 1–2 hours) where TH activities occur.

**Short-Term Goal**
A smaller, measurable step that contributes to achieving a long-term goal.

**Silt**
A soil type with medium particles, offering better drainage than clay but more nutrient retention than sand.

**Social Learning Theory**
Theory that people learn by observing and modeling others' behavior.

**Social Program Model (TH)**
TH model focused on community engagement and the achievement of broad health and wellness goals.

**Soil Drainage**
The ability of soil to allow excess water to flow through it, preventing waterlogging.

**Soil pH**
A measure of the acidity or alkalinity of soil; affects nutrient availability and plant health.

**Soilless Gardening**
Growing plants without soil, using mediums like perlite, rockwool, or water.

**Sowing**
The act of planting seeds in the soil or growing medium.

**Strengths-Based Perspective**
An approach that emphasizes individuals' existing strengths and abilities rather than deficits.

**Stratification**
A seed treatment involving cold and moisture to break dormancy and stimulate germination.

**Stress Reduction Theory**
Theory suggesting exposure to nature reduces physiological stress.

**Successive Activity**
An activity that builds across multiple sessions, such as seed starting leading to harvesting.

**Taxonomy**
The science of classifying and naming plants and other organisms.

**Therapeutic Garden**
A garden designed intentionally to support healing, accessibility, and participant well-being.

**Therapeutic Horticulture (TH)**
The facilitated use of plants and nature-based activities to achieve health and well-being goals.

**Therapeutic Use of Self**
The therapist's intentional use of personality, insights, and communication to build trust and support participants.

**Tilling**
The process of breaking up and turning over soil to prepare it for planting.

**Toxicity**
The degree to which a substance or plant part can cause harm to humans or animals.

**Toxicity Classification System**
Categories used to rank plants or substances by level of danger (e.g., mild, moderate, severe).

**Transplanting**
Moving seedlings or plants to larger growing spaces for continued growth.

**Treatment Outcome**
The result of a therapeutic intervention, measured against goals.

**True Leaves**
The first leaves resembling the mature plant's foliage, appearing after cotyledons.

**Tubers**
Swollen underground stems that store nutrients and produce new plants.

**Unconditional Positive Regard**
The therapist's complete acceptance and nonjudgmental attitude toward participants.

**Undeveloped Sites**
Settings lacking infrastructure, funding, or staff, where practitioners must build programming from the ground up.

**Universal Design (UD)**
A design philosophy emphasizing environments and tools that are accessible to all people, guided by seven principles: equitable use, flexibility in use, simple and intuitive use, perceptible information, tolerance for error, low physical effort, and size and space for approach and use.

**Vocational Program Model (TH)**
TH model focusing on skill development and job readiness.

**Water-Wise Plants**
Plants that thrive with minimal water once established. Examples: succulents, cacti.

**Weeds**
Plants considered undesirable or out of place in a specific context.

## Appendix A: Adaptive Tools Reference

This appendix provides a visual catalog of adaptive tools commonly used in therapeutic horticulture. These tools enhance accessibility, safety, and inclusivity for participants with diverse abilities. For descriptions and practice-based guidance, see the Adaptive Tools Guide and Adaptive Techniques sections of this manual.

## Seating

**Seating with Backrests & Armrests**

**Wheeled Seat**

**Fixed Seating**

**Garden Scooter**

**Garden Kneeler/Seat**

**Garden Kneeler/Seat**

**5 Gallon Bucket**

**5 Gallon Buckets with Seat Cushions**

**Garden Rocker**

# Gripping Aids

**Foam Cushion Grip**

**Rubber Cushion Grips**

**Faucet Grip**

**Strap Grips**

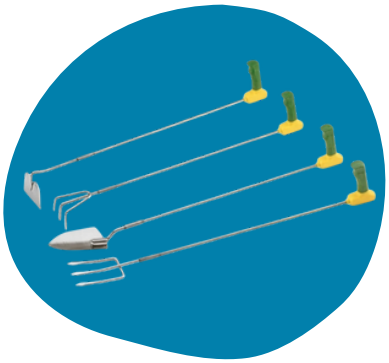
**Strap Grip Gloves**

**Angled Handle Support Grip**

**Support Cuff**

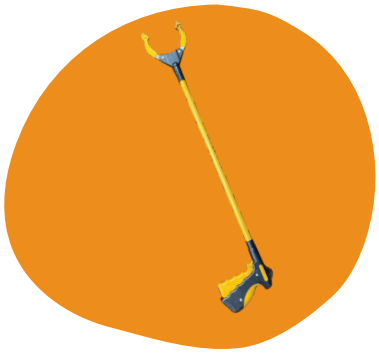
**Support Cuff**

# Long Reach Tools



**Easi Grip Long Reach Tools**

**Scuffle Hoe**



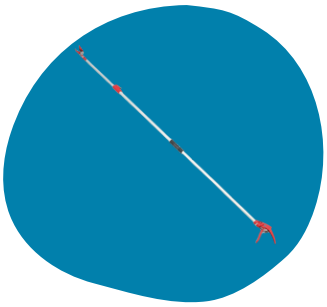
**Reacher-Grabber Tool**

**Telescoping Hand Tools**

# Pruning & Cutting Tools

**Ratcheting Pruners**

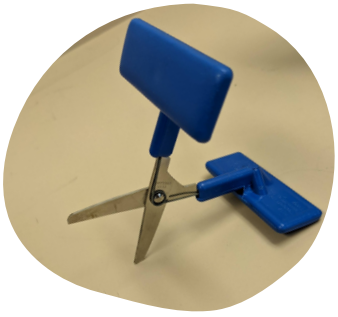

**Electric/Battery-Operated Pruners**



**Extended Reach Pruners**

**Long-Handled Lawn Shears**

**Cut and Hold Pruners**



**Push Down Scissors**

**Long Loop Scissors**


**Scissor Mouse**

## Kneeling & Rising Devices

**Foam Kneeling Pads**

**Knee Pads**

**Standard Garden Kneeler**

**Spring-Assisted Garden Kneeler**

**Easy Riser Quad Cane**

## Planting & Scooping Tools

**Trowels- Multiple Sizes**

**Recycled / DIY Tools**

# Watering Tools

**Thumb Control Trigger Wand**

**Squeeze Trigger Wand**

**Extended Reach Wand**

**Pump Sprayer**

**Quick Coupler Attachments**

**Coil Hose**


**Watering Cans**

**Bottle-Top Waterer (DIY)**

# Seeding Tools


**Seeding Square**

**Tweezers**

**Pelleted Seed**

**Seed Tape**

**PVC Pipe Seed Planter**

**Seed Dispenser**

**Seed Sprinkler Bottles**

Root in Nature