growing green

TOOLKIT #1

Growing Together: Foundations of Garden-Based Learning

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This toolkit is designed for infant, toddler, and preschool educators who are building developmentally grounded, relationship-centered garden experiences.

Why This Toolkit Includes Birth-Five

Garden-based learning grows over time, just like children. This toolkit brings **infants, toddlers, and preschoolers** together because their learning is interconnected, overlapping, and strengthened when viewed as a developmental continuum rather than separate stages. Young children explore the world through their senses, relationships, and routines, and these foundations remain constant even as skills and independence expand.

Mixed-age settings are common in early childhood programs, and shared guidance helps educators create experiences that are flexible, inclusive, and responsive to the children in front of them. A unified toolkit supports **continuity and smooth transitions**, allowing children to revisit familiar routines as they grow while deepening their engagement in developmentally meaningful ways.

Families also benefit from a single, cohesive framework. When educators use consistent language, routines, and expectations across ages, families experience stronger communication, clearer alignment, and a sense of shared purpose. This continuity mirrors how children develop—gradually, relationally, and through repeated experiences over time.

By keeping infants, toddlers, and preschoolers together, this toolkit supports **longitudinal skill building**, honors the realities of mixed-age care, and aligns with play-based, relationship-centered models of early learning. The result is a garden experience that grows with children, rather than being rebuilt at each age level.

Purpose

Garden-based learning in early childhood is rooted in relationships, wonder, and care. This foundational module introduces gardening not as a checklist of tasks, but as a **shared way of being with children,** slowing down, noticing together, and honoring children as capable participants in caring for the natural world.

Gardens do not need to be perfect, productive, or abundant to be meaningful. Seeds that don't sprout, plants that struggle, insects that surprise us, and weather that changes plans all offer powerful learning opportunities.

This module supports educators in building confidence, curiosity, and comfort with garden-based learning, regardless of prior gardening experience.

Grow Your Own Way

This toolkit is intentionally flexible. Educators are encouraged to:

- Begin with sections that are most meaningful
- Revisit the same experiences many times
- Adapt language and activities to their setting
- Skip or modify anything that does not fit their context
- Return to this module whenever new children, families, or educators join the classroom

Foundations are not completed once. They are revisited, strengthened, and re-rooted over time.

Get Growing!

You do not need a full garden to begin introducing infants, toddlers, or preschoolers to gardening. You need a few simple materials, a calm pace, and repeated opportunities for children to explore with their senses.

ECE resources often include ideas tailored mostly for preschool, leaving infant and toddler educators to adapt experiences to meet their needs. Below is a continuum of learning experiences for **infant and toddler** to **preschool**. As we know all children grow and develop at their own pace, we hope this is helpful in selecting experiences that meet the needs of every child in your classroom.

We recognize that children's safety is a top priority for all. There is an entire section on safety concerns and solutions a little further in the toolkit, but starting with very small groups of children and close supervision will help.

Step 1: Choose A Few Simple Materials

- **Shallow tray with soil for patting and scooping**
- **Soft-leaf herbs (mint, basil) for smelling and touching**
- **One large seed in a clear container (with or without lid)**
- **Small cup for shared pouring**
- **Small pot with soil for individual planting**
- **A choice of 2–3 seeds**
- **Small spray bottle or watering can**
- **Natural loose parts (stones, sticks) for arranging**

Step 2: Introduce Them Slowly

- **Sit close for co-regulation and supervision**
- **Narrate sensory experiences: "You're smelling the leaf. It's minty."**
- **Keep sessions short (2–5 minutes)**
- **Provide scoops and small recycled containers for children to use**
- **Invite predictions: "What do you think will happen when we add water?"**
- **Encourage gentle hands and turn-taking**
- **Allow longer exploration (10–15 minutes)**

Step 3: Repeat for 3–5 Days

- Offer the same materials in the same spot
- Expect new sensory behaviors each day
- Celebrate learning: "Today you pressed the soil with your whole hand."
- Add simple observation prompts:
  - "What looks different today?"
  - "Do you see anything new in the soil?"
- Invite children to remember what happened yesterday

Step 4: Establish One Care Routine

- Infants: explore water with fingers while you model watering
- Toddlers: hold a small cup together to pour
- Use consistent language: "We're helping the plant. Gentle hands."
- Assign simple rotating roles (Water Helper, Leaf Checker)
- Introduce checking soil moisture with a finger
- Encourage noticing: "Does the plant look thirsty today?"

Step 5: Reflect Before Expanding

- Are infants reaching, leaning in, or visually tracking?
- Are toddlers returning to the pot, pointing, or vocalizing interest?
- Are children regulated during the experience?
- If yes, add one new sensory element (a new herb, a large smooth stone, a small spray bottle)
- Are children asking questions or making connections?
- Are they remembering routines or noticing changes?
- If yes, introduce a new step (choosing seeds, labeling pots, simple charting)

Start small. Stay consistent. Add slowly. The garden grows in layers, just like children.

The Garden Cycle

Garden-based learning unfolds in cycles rather than straight lines.

Foundations → Planning → Planting → Tending → Harvesting → Reflecting → Returning to Foundations

Each phase builds on the last.

- Foundations focus on comfort, relationships, and engagement.
- Planning invites shared decision-making and amplifies children's voices.
- Planting turns ideas into action.
- Tending builds responsibility and inspires observation.
- Harvesting includes trying new foods, celebration, and reflection.

At any point, educators may return to the Foundations stage when new children, families, or seasons begin.

The cycles repeat and the learning deepens.

Toolkit 1 - Foundations of Garden-Based Learning

Toolkit 1 introduces garden-based learning as a **relationship-centered, process-based practice.** This toolkit may be revisited at any time in the gardening cycle (**Planning, Planting, Tending, and Harvesting**) especially when new children, educators, or families join the garden community.

Garden-based learning in early childhood is rooted in relationships, wonder, and care. This foundational toolkit introduces gardening not as a checklist of tasks, but as a ***shared way of being with children - slowing down, noticing together, and honoring children as capable participants in caring for the natural world***. The resources within support educators in building confidence, curiosity, and comfort with garden-based learning, regardless of prior gardening experience.

Gardens do not need to be perfect, productive, or abundant to be meaningful. Seeds that don't sprout, plants that struggle, insects that surprise us, and weather that changes plans all offer powerful learning opportunities.

Introduction

Garden-based learning in early childhood is not simply about growing plants, it is about growing relationships, building awareness, and creating opportunities for children to get involved. At its heart, gardening with young children is an invitation to slow down, observe closely, and engage with the natural world alongside children rather than directing them through it.

When the garden is viewed as a living classroom where curiosity, uncertainty, and care are valued more than outcomes or productivity, gardening can be embraced as a process-based practice - one that mirrors children's own learning journeys. Educators are encouraged to release pressure around "successful" harvests or perfectly planned lessons. Seeds may fail to sprout, leaves may yellow, insects may disrupt plans, and weather may force changes. Each of these moments offers rich opportunities for inquiry, empathy, and resilience.

Gardening also provides an opportunity to look at nature-based learning within an equity-centered and justice-oriented framework. Not all children have access to safe outdoor spaces, fresh food, or opportunities to interact with nature in their daily lives. This toolkit ensures all children experience nature as part of daily care and learning, regardless of access to green spaces at home. By using reused materials, shared routines, and sensory invitations, educators communicate that **gardening belongs to everyone**.

Children's preferences, cultures, and ways of engaging are honored from the very beginning. By embedding gardening into early learning environments, educators affirm that access to nature, sustainability education, and environmental care is a right, not a privilege.

This toolkit establishes a philosophical foundation for supporting educators (regardless of prior gardening experience) in developing confidence, curiosity, and comfort as they incorporate gardening into their daily work with children. Gardening here is positioned not as expertise-driven instruction, but as relational practice, grounded in listening, co-learning, and honoring children as capable contributors to the world around them.

Goals Alignment + Learning Outcomes

This toolkit intentionally supports MVCDC Readiness Goals through relationship-centered, hands-on experiences. Through repeated, meaningful engagement with soil, plants, water, and care routines, children develop:

- **Persistence and Independence** as they return to materials, initiate care routines, and engage deeply over time
- **Vocabulary Development** through rich, descriptive language, books, and shared observations of the world around them
- **Critical Thinking and Prediction Skills** as children ask questions, make observations, remember information, and anticipate next steps
- **Physical Development and Healthy Habits** through fine and gross motor activities such as digging, watering, pouring, and harvesting

Garden-based experiences also support learning outcomes by promoting:

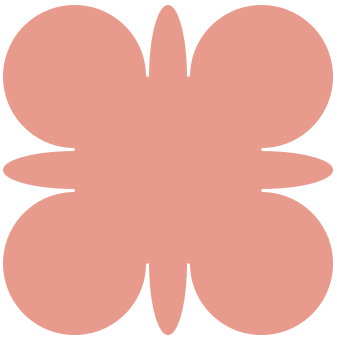
- **Hands-On Exploration and Problem Solving** through open-ended inquiry and experimentation
- **Language and Literacy Development** connected to garden experiences, storytelling, and documentation
- **Math and Science Connections** through counting seeds, comparing soil, mapping spaces, voting, and observing change over time
- **Motor Skills and Wellness** through active care and movement-based learning
- **Environmental Literacy and Sustainability** by embedding reuse, stewardship, and equity into daily practice

These goals are woven throughout the toolkit and revisited across ages, settings, and seasons.

Garden-based learning in this toolkit is:

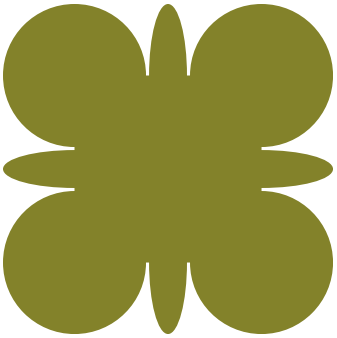
- Relationship-centered and process-based
- Grounded in curiosity, care, and shared presence
- Flexible across ages, abilities, spaces, and seasons
- Accessible regardless of gardening experience or resources
- Focused on comfort, connection, and belonging

Letting Go of Outcomes



A teacher notices that the seeds planted last week have not sprouted. Instead of replanting right away, she sits with the children and invites them to gently explore the soil. They notice softened seeds, damp earth, and a small insect moving below the surface. The group talks about waiting and wondering. The teacher resists fixing the moment, making way for learning to continue.

Equity in Practice

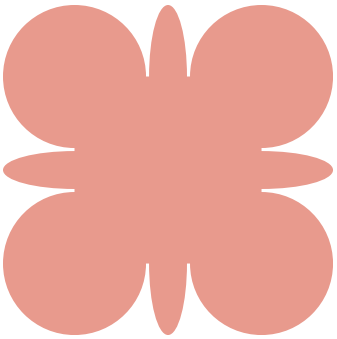


With no outdoor garden space available, a classroom spends a few days exploring seeds and soil as they place them into reused containers. They place the containers near a sunny window and children take turns misting the plants each morning. Over time, the plants become part of the room's rhythm. Children check on them during free play, point them out to visitors, and remind one another to use gentle hands while exploring them.

Garden-based learning in this toolkit is not:

- A checklist of activities to complete
- An expectation to grow food successfully
- Dependent on outdoor space, raised beds, or materials
- Focused on productivity, timelines, or “finished” outcomes
- Another task added to an already full day

When Gardening Stays on Paper



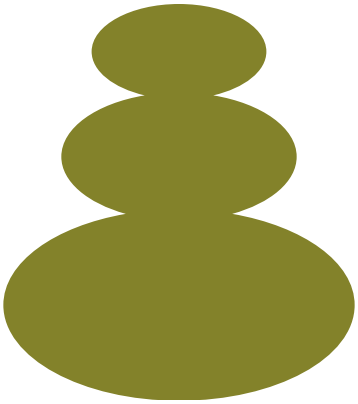
The tables are covered in preprinted worksheets, rows of identical flowers waiting to be colored and labeled. Crayons roll across the surface as children shift in their seats. One child stares at the page, unsure where to begin. Another finishes quickly and begins tapping their pencil against the table. A few children slide off their chairs, looking toward the window. The room feels busy but disconnected.

The lesson is about gardening, yet no soil is touched. No scent of mint lingers in the air. No water spills onto curious fingers. The garden exists only as an outline to be filled in.

Reflective Pause

Take a moment to consider:

- Which of these examples resonate with me? Why?
- What does “success” look like for me in this garden space?
- Where might I release pressure and allow learning to unfold more slowly?
- How can creating comfort and connection guide my next steps?



There is no rush. Foundations grow underground first.

Supervision + Safety Guidelines

Garden-based learning invites hands-on exploration with real materials. With that invitation comes thoughtful preparation. Safety is not about completely eliminating risk. It is about **anticipating, supervising, teaching, and modeling safe practices** so children can explore confidently and responsibly.

Safe exploration builds confidence and competence, for children and educators alike.

Active Supervision

Remain within close proximity during garden activities. Position yourself so you can see all children and move quickly if needed. Tiny seeds, clumps of dirt, and water in watering cans or cups become interesting items to explore with little fingers and mouths. Remaining in close physical proximity to children means you can quickly intervene to redirect children as needed. Young children explore with their whole bodies and often become excited, sometimes forgetting safety rules and expectations.

Present caregivers, positive intent, and frequent, positively-phrased, safety reminders help keep the garden a safe space for exploration, discovery, and connection.

Clean and Safe Materials

- Use pesticide-free soil and plants
- Avoid treated lumber or chemically treated materials
- Inspect reused containers for sharp edges
- Ensure proper drainage in containers - standing water leads to more mosquitos
- Check for mold before use

If unsure about a material, do not use it.

Handwashing Routines

- Wash hands before and after garden play
- Wash hands before eating
- Keep wipes accessible when sinks are not nearby

Handwashing is a routine, not a reaction to fear.

Tool Safety

- Use child-sized, developmentally appropriate tools
- Introduce tools indoors before outdoor use
- Demonstrate how to carry tools safely (point down, handle-first)
- Limit the number of tools available at one time
- Store tools out of reach when not in use

Tools are introduced with instruction, not assumption.

Clear Physical Boundaries

Define:

- Where digging is allowed
- Where walking paths are
- Where plants should not be stepped on
- Where tools are stored

Children need visible and consistent boundaries - and patient, supportive caregivers to provide reminders.

Plant Awareness

Before planting:

- Verify plants are non-toxic
- Avoid thorny or sharp-edged plants for young children
- Be aware of allergies within your group

If uncertain about a plant, research before introducing it.

Weather + Environmental Conditions

Monitor:

- Heat and hydration needs
- Sun exposure (hats, shade, sunscreen)
- Cold weather layering
- Slippery surfaces after rain

Exploring in all types of weather is part of the learning, but safety remains a priority.

Emotional Safety

Garden learning should feel regulated, not chaotic.

If energy escalates:

- Pause the activity
- Revisit agreements
- Reduce materials
- Break into smaller groups

Safety includes emotional regulation - for educators and children.

Licensing + Program Policies

Follow your program's health and safety guidelines at all times.

This may include:

- Required ratios
- Tool restrictions
- Food safety regulations
- Documentation procedures

Garden-based learning should align with existing policy, not work around it.

INFANTS + TODDLERS

(0-36 months)

Gardening With Our Youngest Learners

For infants and toddlers, garden-based learning centers on **sensory exploration, emotional connection, and caregiving routines**. At this stage, children are not expected to understand plant life cycles or environmental systems. Instead, they are building trust in the world through repeated, meaningful interactions with people, materials, and environments.

Gardening experiences for this age group prioritize:

- Sensory engagement (touching, smelling, hearing, seeing)
- Attuned adult presence and emotional security
- Repetition and predictability
- Learning how to gently care for living things

Educators are encouraged to follow children's cues, linger in moments of interest, and model calm curiosity rather than directing outcomes. A toddler who repeatedly pats soil or reaches for the same leaf is not "stuck"...they are learning deeply through repetition.

Even at this early stage, children can begin participating in simple decision-making. Offering small choices (which plant to water, which tool to hold, where to sit) introduces early experiences of agency and fairness. Turn-taking during care routines lays the foundation for participation and shared responsibility in the preschool years.

This Is What Progress Feels Like

Beginning garden-based learning can feel unfamiliar, especially for educators who did not grow up gardening or who feel unsure outdoors. Feeling uncertain, asking questions, and moving slowly are part of the process. Children do not need experts. They benefit from educators who are **present, curious, and willing to learn alongside them**. Keep in mind that safety and success at this stage are rooted in being in close proximity and the repetition of positively-phrased reminders and expectations.

Infants + Toddlers as Active Explorers

Infants and toddlers are developing foundational understandings that will shape future learning, including:

- **Cause and effect**
  Constantly investigating the world around them - "When I touch the soil, it moves." "When I squeeze the sponge, water comes out."
- **Sensory awareness and integration**
  Experiencing textures, temperatures, smells, sounds, and visual contrasts in real time.
- **Attachment and emotional regulation**
  Feeling safe exploring the world with trusted adults nearby.
- **Early concepts of care and empathy**
  Learning that living things require gentleness and attention.

Learning Empathy in the Early Years

From an equity perspective, garden-based experiences help ensure that **all children (regardless of family income, housing situation, or neighborhood access) experience nature as a consistent and valued part of daily care and learning**.

These early sensory and relational experiences form the groundwork for later understanding of systems, sustainability, and shared responsibility. When children repeatedly experience care, cause and effect, and gentle stewardship, they build the foundation for future conversations about fairness, community, and environmental justice.

Core Experiences + Activity Invitations

These experiences are designed to be repeated, adapted, and revisited over time. Prioritize **responsiveness over completion** and allow children's interests to guide your pacing.

The following activities are intentionally open-ended and designed to be revisited frequently. Learning comes from repetition, not novelty. Materials should be eco-friendly, reused when possible, and accessible to children with varied abilities.

Educators are encouraged to observe children closely, adapt experiences for individual children, and allow activities to evolve based on children's interests.

Understanding Core Experiences & Invitations

In this stage, core experiences with gardening focus on sensory connection, emotional safety, and gentle care. The heart of garden-based learning for infants and toddlers is not in merely completing an activity. Instead, focus on providing rich sensory experiences, such as feeling the soil, watching the water flow out of a watering can, and smelling the leaves or blooms on a plant. Children of this age learn through their senses , forming neural connections that link sensation to meaning. Touch, taste, smell, sight, sound, and movement all help their brains to build understanding. It's also crucial that these experiences take place within a calm, responsive relationships with a caregiver.

The activities that follow are invitations. They provide materials, language, and structure that help children enter these moments of connection. The invitation supports the experience. The experience is what we protect.

If an activity feels rushed or overstimulating, return to the core: slow down, stay close, and notice together.

Activity 1:
Sensory Garden Welcome

Before exploring outdoors:

- Introduce materials gradually during circle time, in the dramatic play area, or at the sensory table.
- Introduce the word soil and allow children to touch a small bowl indoors.
- Model “gentle hands” using a baby doll or soft plant.
- Show child-safe tools and name them: “This is a shovel. We use it to scoop.”
- Demonstrate how to smell a plant without pulling it.

Educators may:

- Discuss the best time of day to introduce some of these materials and how children might best be grouped together to help supervision feel manageable.
- Practice passing materials during group times to slowly build turn-taking and patience.

This preparation builds predictability and reduces hesitation when children encounter the materials outdoors.

Keep language simple and concrete:

- *“Soil is dirt that helps plants grow.”*
- *“Gentle means soft and careful.”*

Vocabulary

Before the Experience:	During the Experience:
• Soil • Gentle • Tool • Scoop • Help	• Plant • Roots • Leaves • Stem • Smell

Use short, repeated phrases:

- *"The soil is cool."*
- *"You're holding the stem."*
- *"Gentle hands."*

Consistent repetition strengthens early language connections.

Materials

- Potted herbs or plants
- Shallow tray with soil
- Soft brushes
- Child-safe gardening tools

Instructions
Sit on the ground or floor at the child's level to reduce hierarchy and invite shared exploration. Introduce one material at a time, allowing children to approach at their own pace. Some children may touch immediately; others may observe quietly before engaging.

Narrate descriptively without directing behavior:

- *"You're touching the soil. It feels cool."*
- *"That plant smells strong."*
- *"You're using the shovel to scoop."*

Repeat this experience over multiple days using the same materials. Familiar routines build trust and deepen exploration.

KDI Alignment: A1, B11, C14, D16, E22

Learning Focus: *Sensory Awareness, Trust, Early Language*

Activity 2:
Soil Play Invitations

Before exploring outdoors:

- Introduce dry and wet using sponges or cloths during group time.
- Practice scooping and pouring with sand or water indoors.
- Demonstrate how to hold a scoop with two hands for stability.
- Model returning materials back into a tray.
- Practice briefly waiting for a turn (as appropriate).

Educators may:

- Discuss the best time of day to introduce some of these materials and how children might best be grouped together to help supervision feel manageable.

Children benefit from practicing the motor motion indoors before transferring it outside.

Vocabulary

Before the Experience:	**During the Experience**:
• Dry • Wet • Scoop • Pour • Full • Empty	• Damp • Pat • Heavy • Light • More • Less

Support comparison language:

- “This soil is dry. That soil is wet.”
- “Your cup is full.”

Simple contrasts strengthen early science thinking.

Materials:

- Dry soil
- Damp soil
- Scoops
- Cups
- Small containers

Instructions
Offer two soil textures side-by-side to encourage comparison. Allow children to scoop, pour, pat, squeeze, or simply observe. Avoid correcting use unless safety is involved. Instead, model appropriate actions nearby.

Join the play and comment on what you notice:

- *"The soil is falling through your fingers."*
- *"You filled your cup all the way."*

Challenges and Supports

- Throwing soil → Reduce amount of soil.
- Mouthing soil → Redirect calmly, "The soil is for our hands, it's not safe for your mouth." Infants especially will keep trying to mouth the soil and will need repeated, calm redirection. After several attempts, you can redirect to a different experience, but try to allow multiple opportunities for children to interact with the soil during the week. Children need opportunities to practice not mouthing items, as it comes so naturally to them.
- Reluctance to participate → Model play nearby and narrate what you are doing as children watch.

Children learn through repetition and experimentation.

KDI Alignment: A1, E22, E24, E29, E35

Learning Focus: Cause and Effect, Comparison, Motor Development

Activity 3: Nature Noticing Blanket

Before exploring outdoors:

- Demonstrate how to gently handle items.
- Help children see what they can do with materials other than mouthing them.
  - Holding items in their hands
  - Turning them over and look at the other side
  - Putting them into and taking them out of container

Educators may:

- Want to determine the best location for the blanket in your outdoor space, avoiding direct sunlight for young babies.
- Want to discuss strategies for grouping children together to participate to make supervision easier.
- Work with your teaching team to decide which objects will be most interesting or safest for children to explore.
- Look for ways to forage for materials responsibly: finding items already on the ground versus pulling them off of plants or trees.

Nature noticing builds early science habits. Infants and toddlers develop attention skills when adults slow down and share in moments of discovery.

Vocabulary

Before the Experience:	**During the Experience**:
• Look • See • Safe • Gentle	• Leaf • Flower • Smooth/Rough • Big/Small • Long/Short

Materials

- Blanket
- Leaves
- Flowers
- Large pinecones
- Sticks
- Containers

Instructions
Spread materials across a blanket. Sit together quietly. Pause often. Let children lead exploration. Narrate descriptively without directing behavior

Keep language simple and concrete:

- *"You are looking at the leaf. You picked it up with your fingers."*
- *"You held the pinecone up like this" (and model what they did).*

This activity emphasizes being present and responsive to children as they explore the world around them.

Challenges and Supports

- Mouthing → Redirect calmly, "The pinecone is for holding, like this." (and model, then hand it to the child for them to try.)
- Mouthing → Offer containers for children to drop items into and pick dump out. Having multiple ways to interact with the materials may help reduce mouthing behaviors.
- Lack of interest → Comment on what the child is interested in - crawling around, looking at the sky, noticing a bird nearby

KDI Alignment: A1, B6, D16, D19, E22, E29

Learning Focus: Early Observation Skills, Joint Attention

Activity 4: Water Exploration

Before exploring outdoors:

- For infants, comment on the water and how it flows as you help wash hands before and after meals and diaper changes.
- For toddlers, model how to squeeze spray bottles and how to hold the watering can to allow water to pour out. This can be done without water at group time.
- Talk with the children about how plants drink water through their roots.
- Demonstrate watering slowly and gently.

Educators may:

- Want to make sure children have an extra change of clothes ready.
- Look for some natural plants for children to spray or water with the watering can to avoid wasting water.
- Demonstrate how children can use spongers and shallow pans to explore water in an additional way.

Keep language simple and concrete:

- *"Squeeze, like this." (and model)*
- *"Tip it over gently."*

Water play supports emotional regulation and motor coordination. The sensory quality of water is naturally calming for many children.

Vocabulary

Before the Experience:	**During the Experience**:
• Water • Spray • Pour • Wet	• Mist • Drip • So • Thirsty • Share

Materials

- Spray bottles
- Small watering cans
- Sponges
- Plants (potted or outdoors)

Instructions
Invite mobile children to help water the plants. Switch between the watering can and spray bottle to help provide children with multiple ways to explore the water. Bring young babies near the experience so that they can observe what is happening. Talk with toddlers about what they are doing as they explore the materials.

Narrate descriptively without directing behavior:

- *"The water flows out when you tip it."*
- *"Look at the mist that comes out when you squeeze the handle."*

Challenges and Supports

- Dumping out lots of water → Model slowing down and reduce the amount of water inside the watering can as children get used to the activity.
- Spraying water into their mouths → Ensure that children have access to drinking water and redirect them when needed. Show them where they can spray the water.

Simple activities like these encourage motor development, language development, scientific thinking, and self-regulation.

KDI Alignment: A1, A2, B6, C12, D18, E22, E29, E35

Learning Focus: Motor Strength, Language Development, Scientific Thinking, Self-Regulation

Activity 5: Garden Sounds + Smells

Before exploring outdoors:

- Practice listening inside by noticing sounds in the environment and describing them or inviting children to describe what they hear.
- Draw children's attention to the aroma of various foods during meal times and snacks as a way to introduce the sense of smell.

Educators may:

- Want to discuss a variety of herbs to introduce, one at a time.
- Place a small amount of herbs in jars with ventilated/fine mesh coverings or lids with small holes poked in them so children can safely handle and smell the herbs.
- Take a brief walk around the outdoor space and see what sounds can be heard (birds, insects, walking across various surfaces, wind, etc.)

Keep language simple and concrete:

- *"I can hear the wind."*
- *"The birds are chirping."*

Vocabulary

Before the Experience:	**During the Experience**:
• Listen • Hear • Smell • Aroma • Quiet	• Wind • Bird • Chirp • Scent • Herb • Fresh/earthy/minty/spicy/zesty

Use short, repeated phrases:

- *"We can smell the herbs." (and model)*
- *"What do you hear?"*

Materials

- Herb
- Flowers
- Wind chimes

Instructions
Sit with the children outside.

Narrate descriptively without directing behavior:

- *"You are looking at the wind chime. I hear it making beautiful sounds."*
- *"This herb smells savory."*
- *"I hear a bird chirping. I wonder where he is."*

Sound and smell are powerful early memory builders. This activity promotes calm attention and emotional security.

Challenges and Supports

- Overstimulation (children turning away or fussing) → Ensure the area isn't too bright. Reduce the number of materials.
- Attempting to mouth items → It's very likely that when you encourage an infant to smell, they will attempt to mouth the items. Use language to redirect them to smell and model this by doing it yourself. This is part of the process for young children and it will take time.

Infants and toddlers benefit greatly from hearing language about what is happening in the world around them. Babies merely being present as experiences are going on around them still benefits their development.

KDI Alignment: A1, B6, D18, E22, F41

Learning Focus: Language Development, Emotional Regulation, Auditory Discrimination, Sensory Integration

Activity 6: Care Routines

Before exploring outdoors:

- Draw attention to the care routines in your classroom, such as cleaning tables before and after meals, washing hands, and watering plants.
- Talk about how these routines help keep us safe and healthy.
- Show the parts of a plant or seedling and what care they need to grow strong and healthy.

Educators may:

- Determine the best time in the daily schedule to engage in care routines.
- Discuss how you can hold infants or place materials on the floor or a low table so that they can observe these care routines with plants or seedlings.
- Reflect on which routines are the smoothest in your classroom.
  - How did you help the children learn these routines?
  - How could you extend this process to helping children learn care routines for plants (both indoors and out)?

Keep language simple and concrete:

- *"First we wipe the tables and then we can eat."*
- *"Watering the plants every day helps them be strong."*

Vocabulary

Before the Experience:	**During the Experience**:
• Care • Help • Gentle • Together	• Water • Wipe • Grow • Clean • Drink

Use short, repeated phrases:

- *"We water these plants every morning."*
- *"The water comes out slowly when we pour like this." (and model)*

When children see their caregivers repeatedly engaging in tasks, it helps build excitement and interest. When children are invited to participate in these tasks, they begin to develop a sense of responsibility for caring for the world around them.

Materials

- Watering cans
- Soft cloths
- Plants

Instructions
Establish predictable routines for caring for classroom plants or seedlings. Move slowly and invite the children to be active participants. Describe what you do while you engage in these routines. Focus on bringing infants over to observe the care that is taking place and encouraging toddlers to be active participants.

Narrate descriptively:

- *"I'm filling this up with water."*
- *"We're going to gently wipe the leaves with this cloth."*

Challenges and Supports

- The routine feels chaotic (lots of children) → Work individually to give each child a chance to participate throughout the week. New things are extra exciting for toddlers, so work to help this become part of the daily routine.

KDI Alignment: A1, B6, B7, B11, C12, D18, E35

Learning Focus: Attachment, Executive Function, Motor Coordination, Social Learning

What Learning Looks Like for Infants + Toddlers

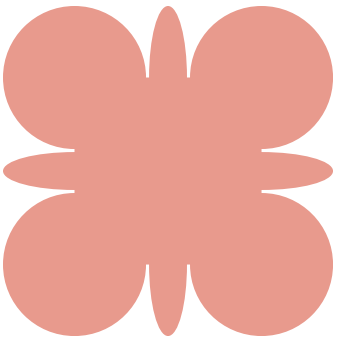
- Returning to garden materials or spaces independently
- Showing comfort touching soil, water, or plants
- Using gestures, sounds, or facial expressions to show interest
- Watching closely as adults model gentle care
- Repeating actions like pouring water, patting soil, or touching leaves

As You Engage in Garden Learning, You May See

- Children are returning to the same garden materials repeatedly
- There are longer periods of calm, focused engagement
- Educators are talking less and observing more
- Care routines are becoming part of daily rhythm
- Children are showing comfort with soil, water, and living things

These moments (often quiet and easily overlooked) are meaningful indicators of learning.

Honoring Repetition

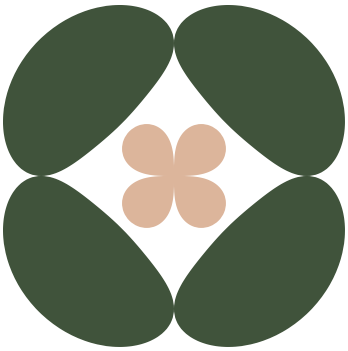


During morning exploration, Noor repeatedly reaches for the mint plant, rubbing the leaves between her fingers. Her teacher notices this interest and begins including mint in multiple activities, placing it near the diaper-changing area to smell, adding it to the sensory tray, and watering it together each day. Noor's repeated engagement is honored as meaningful learning, reinforcing her agency and curiosity.

Reflective Pause

- How am I noticing and honoring children's preferences?
- Are materials accessible to children with different abilities?
- Am I allowing enough time for repetition and exploration?

Teacher Language + Scaffolding



Educator language should be slow, descriptive, and affirming. Examples include:

- “You’re using gentle hands.”
- “That soil feels wet.”
- “You are looking at the leaf.”
- “I’m right here with you.”

Make Eye Contact

Get on the child’s level and make eye contact to get their attention before making statements or asking questions.

Use Descriptive Language

Describe what you are doing with language (self-talk). “I am using the shovel to dig a small hole.”

Describe what the children are doing with language (parallel-talk). “You are scooping up the dirt with your shovel.”

Ask Questions and Wait

When asking questions, pause and give the child time to process what you’ve just said. If the child does not respond after a while, use language to answer the question.

“What does the soil feel like?” Model touching the soil and then say, “The soil feels wet because we just watered the plant.”

Create Invitations to Play

Set out a few simple materials and invite the children to explore. This provides many opportunities to introduce language and help children make connections between new materials and words to describe them.

Gardening Vocabulary

- **Tool:** Something we use to help us work or care for plants
- **Pot/Container:** A place where plants can grow
- **Seed:** A baby plant waiting to grow
- **Soil:** The dirt plants need to live
- **Water:** What plants drink to grow
- **Gentle:** Using soft, careful hands
- **Choice:** Picking what you like or want
- **Care:** Helping something stay healthy

Gardening Board Book List

- *Planting a Rainbow* – Lois Ehlert
- *Tap the Magic Tree* – Christie Matheson
- *Up in the Garden and Down in the Dirt* – Kate Messner
- *The Curious Garden* (abridged/board version) – Peter Brown
- *Hello, Garden!* – Samantha Berger
- *Little Green Fingers* – Cee Biscoe
- *Baby Loves Spring!* – Karen Katz
- *Garden Time* - Jill McDonald
- *One Little Seed* - Becky Davies
- *Look & Learn In My Garden* - Ruth A. Musgrave
- *Allie's Garden* - Sabra Chebby
- *The Little Gardener* - Jan Gerardi
- *In The Garden* - Elizabeth Spurr
- *From Seed to Pumpkin* - Jill McDonald
- *My First Book of Growing Food* - Asa Gilland
- *My First Book of Vegetables* - Wonder House Books
- *Plant the Tiny Seed* - Christie Matheson
- *Seed, Sprout, Grow!* - National Geographic Kids
- *In My Garden* - National Geographic Kids
- *1-2-3 Count Along Adventure Garden Harvest* - Christie Williams
- *What Will Fit?* - Grace Lin
- *Eat Your Colors* - Amanda Miller

Read outdoors. Revisit books often. Ensure that all children and classroom languages are represented in books.

Common Barriers + Support Strategies

Beginning garden-based learning with infants and toddlers can feel overwhelming. Concerns about safety, hygiene, supervision, or unpredictability are common and valid.

Below are some frequent challenges and offers practical, developmentally appropriate responses.

Children Putting Soil or Plants in Their Mouth

Mouthing is developmentally appropriate. Infants and toddlers explore the world with their whole bodies.

What Helps:

- Stay close and supervise directly
- Offer clear, calm language: “Soil is not for eating.”
- Provide safe alternatives (teething toys, crunchy snacks before outdoor time)
- Choose clean, pesticide-free soil
- Limit access to very small loose materials

Avoid shaming or reacting strongly. Calm repetition builds understanding over time.

Fear of Mess or Germs

Soil, water, and outdoor materials feel unpredictable.

What Helps:

- Wash hands before and after garden play
- Use a consistent clean-up routine
- Keep wipes and extra clothing accessible
- Start small (one tray of soil rather than a full digging area)
- Safe exposure to natural materials supports immune development

Mess can be reframed as sensory learning.

Children Throwing Soil or Water

Toddlers test cause and effect. Throwing shows curiosity about movement and reaction.

What Helps:

- Model appropriate use slowly and repeatedly
- Redirect gently: “Soil stays in the tray.”
- Provide a throwing alternative (soft balls, leaves in a basket)
- Reduce volume of materials if needed

Consistency and calm tone matter more than correction.

Uneven Participation

Some children engage deeply; others observe from a distance.

What Helps:

- Honor observation as participation
- Offer materials gradually
- Avoid pressuring children to touch
- Sit nearby and narrate gently

Comfort grows with repetition.

Teacher Discomfort Outdoors

Not all educators feel confident in garden spaces.

What Helps:

- Begin with container plants near a doorway or window
- Repeat the same simple routine daily
- Focus on relationship over expertise
- Say aloud, “I wonder…” instead of feeling pressure to know

Children do not need expert gardeners. They need present adults.

Teacher Discomfort Outdoors

It may feel like garden learning is “one more thing.”

What Helps:

- Embed garden moments into existing routines (morning greeting, transition time)
- Water plants during diapering rotation
- Use garden materials in sensory tables indoors

Garden learning does not require separate blocks of time.

Outdoor Conditions + Clothing

Rainy spring and fall weather can make it challenging for infants to explore outdoors without the right outdoor gear.

What Helps:

- Share your program’s outdoor policy with families so expectations are clear
- Encourage weather-appropriate clothing (rain suits, waterproof mittens, boots, extra layers)
- Keep extra clothing on site when possible
- Explore outdoor areas with grass that drains well and dries quickly
- Use tarps, mats, or raised garden beds to create drier standing areas
- Shorten outdoor time on especially cold or wet days
- Create a simple, consistent routine for dressing and undressing

Preparation increases comfort—for children and educators.

Reframing the Challenge

Many of the behaviors that feel like barriers…mess, repetition, mouthing, testing limits, are signs of development.

Infants and toddlers learn through sensory engagement, not perfection.

Slow down. Stay close. Repeat what works.

Family Engagement

Post Photos	Post one photo per week with a short caption such as, *"Today we noticed the soil felt cool and crumbly."* Use hallway boards, secure apps, or printed photo cards for documentation panels—no lengthy explanations needed.
Share Stories of Learning	Share brief observations during pick-up or drop-off, *"She really loved watering the plants today—she stayed with it for a long time."* Focus on comfort, repetition, or calm rather than skills or outcomes.
Provide Noticing Prompts	Offer prompts families can use anywhere such as, "What do you notice about the weather today?" and "Can we touch something soft or rough?" Prompts can be shared verbally, on small cards, or in newsletters.
Model Routine-Based Invitations	Encourage families to connect garden learning to caregiving routines such as talking about "gentle hands" while caring for pets or plants Emphasize that these everyday moments ***are*** the learning.
Celebrate Family Stories	Invite families to share words they use at home for soil, plants, or care (in any language). Incorporate these words into classroom narration to reinforce belonging and identity.

PRESCHOOL
(3-5 years)

Gardening With Preschoolers

As children move from infancy into the preschool years, the foundations of sensory exploration, emotional security, repetition, and early care routines expand into collaboration, planning, and deeper inquiry. What begins as touching and noticing becomes questioning and deciding. The roots remain the same; the branches extend outward.

For preschoolers, garden-based learning expands to include **collaboration, decision-making, critical thinking, and cultural connection**. Children begin to understand that gardens are shaped by human choices and that those choices reflect values, priorities, and care for the community.

Gardening at this stage becomes a context for:

- Democratic participation
- Problem-solving and negotiation
- Early environmental and social justice awareness
- Connection between food, culture, and community

If This Feels Big or Uncertain - You're Not Doing It Wrong

Garden-based learning with preschoolers can feel complex. Children ask big questions, negotiate strongly, and bring strong opinions into shared planning. You may not always have immediate answers, and conversations about fairness, food systems, or environmental care can feel larger than expected.

It is okay to slow down. It is okay to say, "Let's find out together." Preschool garden learning is not about having expertise. It is about modeling curiosity, listening deeply, and building shared understanding over time.

Children benefit most from educators who are present, reflective, and willing to learn alongside them.

Preschoolers as Active Participants

Preschool-aged children are capable of sustained inquiry, reflective thinking, and cooperative planning. They can consider multiple perspectives, anticipate outcomes, and revisit ideas over time.

Emotional safety remains foundational at this age. Preschoolers are capable of collaboration and decision-making, but those skills grow from secure relationships and clear expectations. When children feel safe, seen, and heard, they are more able to negotiate, problem-solve, and take responsibility within the classroom and garden community.

- Establish clear garden agreements before each visit
- Revisit tool safety regularly
- Create designated digging zones
- Model tending practices repeatedly
- Teach food washing procedures explicitly
- Monitor group dynamics during planning discussions to ensure everyone's voice is included
- Invite children to share their experiences and reflect on successes and opportunities for more practice or a modified approach

Regulation comes before reasoning. Connection comes before correction.

Core Experiences + Activity Invitations

These experiences are designed to support early systems thinking - helping children see relationships between soil, water, plants, people, and care. Educators act as facilitators, guiding inquiry without controlling the outcome or directing children toward predetermined answers.

While preschoolers are ready for deeper inquiry and collaborative planning, **sensory exploration remains a primary pathway for learning**. Touching soil, smelling herbs, observing insects, and noticing subtle changes in plants continue to anchor understanding. Inquiry still begins with noticing.

Understanding Core Experiences & Invitations

For preschoolers, core experiences include collaboration, decision-making, inquiry, and shared responsibility. Garden-based learning at this stage is not about finishing projects, but about practicing care, negotiating ideas, asking questions, and seeing how their choices shape the garden community.

The activities that follow are invitations into these deeper experiences. They provide structure and guidance, but they are not the goal themselves. The invitation creates access. The experience creates meaning.

If the focus shifts toward productivity or "getting it done," pause and return to children's thinking, voices, and shared care.

Activity 1: Garden Mapping

Before creating garden maps:

- Introduce basic map concepts during circle time
- Show simple maps
  - Classroom Map
  - Playground Map
  - School Building Map
- Practice drawing shapes to represent real objects
- Introduce words: shade, sunlight, path, edge

Educators may:

- Discuss ways that children can practice mapping the classroom first before mapping the garden.
- Want to reflect on previous learning opportunities to see where they can make connections to prior knowledge.
- Want to reflect on which children may need more or less support with this experience to ensure that enough time is provided over multiple days

This activity can be extended over days and weeks as children revisit their work and add to it.

Vocabulary

- Map
- Grid
- Design
- Scale
- Shade
- Sunlight
- Path
- Border
- Row
- Perimeter
- Trellis
- Seeds
- Seedlings
- Plants
- Soil
- Compost

Materials

- Paper (recycled if possible)
- Markers
- Pencils
- Crayons
- Rulers
- Clipboards

Instructions

- Walk the outdoor space together. Notice sunlight, shade, wind, and potential access points for the future garden bed.
- View photographs of sample garden beds in books or online. Discuss the features and how they help keep plants safe and healthy.
- Then, invite children to draw their garden space and work together to label features. Encourage children to explain their thinking.

Narrate children's actions and ask questions:

- *"What's your plan before you start?"*
- *"What colors or shapes would you like to use?"*
- *"You're drawing a straight line with the ruler. Which part of your garden will this be? How much space does it need?"*
- *"Which part of the garden are you working on?"*
- *"What details would you like to add?"*

Learning about the spaces in a garden prior to planting it helps to ensure children can see how they enter the garden, exit the garden, and ensure that plants and seedlings have enough space and light to grow.

KDI Alignment: A1, A2, C17, D22, D23, D29, E24, E35, F40, G45, G50, H56

Learning Focus: Spatial Awareness, Observation, Collaboration

Activity 2: What Should We Grow?

Before deciding what to grow:

- Teach what a vote is and why we use it.
- Practice voting on simple choices (book or music selection).
- Introduce tally marks and counting.
- Discuss making compromises and including everyone's voice.

Educators may:

- Want to have discussions with children about foods that are eaten in their families.
- Want to identify when there are opportunities for voting to happen within the daily routine, such as what book is read at group time or which materials are taken out to the playground for outdoor time, to introduce the concept of voting.
- Reflect on children's current knowledge of counting and tally marks and how this can be introduced in small groups for children who may not know what they are.

This activity is intended to help determine foods that are important to children and their families and identify foods that will grow in the local hardiness zone. With this information, educators can help children learn the process of voting and sharing their opinion to guide what happens next.

Vocabulary

- Hardiness Zone
- Choice
- Vote
- Tally
- Decide
- Agree
- Fair

Materials

- List of fruits or vegetables that will grow in our hardiness zone
- Photographs of these fruits or vegetables in books or magazines
- School lunch menu to help children reflect on the foods that they enjoy
- Seed catalogs
- Seed packets
- Chart paper (or smaller recycled paper if activity conducted in small groups)
- Markers

Instructions

- Discuss plants that will grow in our hardiness zone. Display photos and talk about which of the fruits or vegetables the children have had before.
- Chart ideas and invite children to vote using stickers, tally marks or by writing their name (as appropriate).
- Reflect on the results together and do some data analysis to make decisions.

Narrate children's actions and ask questions:

- *"What foods do you eat at home? Who cooks in your family? What foods are special to you?"*
- *"You voted for the beans. What do you like best about them?"*
- *"We have the same amount of votes for the beans and the peas. How should we decide what to plant? What else might we need to think about?"*
- *"How can we include everyone's thoughts?"*
- *"How can we make choices that are fair for everyone?"*
- *"How might the weather impact how these foods grow?"*

Including children in making decisions about what to grow in the garden can help them to be more motivated to meaningfully participate in its care and upkeep.

KDI Alignment: A1, A2, B11, B15, D22, E39

Learning Focus: Democratic Decision-Making, Cultural Inclusion

Activity 3: Soil Investigations

Before exploring soil:

- Introduce magnifying glasses and how to use them.
- Practice observation language: “I notice…”.
- Compare textures indoors (sand vs. flour).
- Introduce descriptive words: gritty, clumpy, smooth.

Educators may:

- Want to discuss how to best invite the children to explore the sand and flour prior to the soil samples by:
  - Reflecting on the children’s comfort level with touching various textures
  - Determining when to do this within the daily schedule
- Want to reflect on the best place outdoors to engage in the soil investigations, considering set up and clean up.

This activity is intended to help children learn about the properties of soil and how it helps seeds and plants to grow.

Vocabulary

- Investigate
- Discover
- Explore
- Observe
- Magnify
- Texture
- Senses
- Absorb
- Soil
- Loam
- Clay
- Peat
- Aerate
- Gritty
- Clumpy
- Smooth
- Fluffy
- Slimy
- Sticky
- Gooey

Materials

- Small trays
- Soil samples (loam, clay, peat)
- Small amount of cornstarch
- Small amount of sand
- Magnifying glasses
- Scoops
- Paint brushes
- Hand brooms and dustpans for cleaning up

Instructions

- Invite the children to join you as you sit with trays of various types of soil, magnifying glasses, scoops, and paintbrushes to explore.
- Compare the soils by color, texture, and smell.
- Discuss what plants might need to grow well and why different soils matter.

Narrate children's actions and ask questions:

- *"You don't seem to like touching the soil. Would you like to try a paintbrush or a scoop to explore it instead?"*
- *"You are looking through the magnifying glass at the soil. What do you see in this one?"*
- *"How is this soil different from this one?"*
- *"This soil seems to stay wet for a longer period of time. How do you think this might help the plants that will be in the garden?"*

Looking at, touching, and smelling the soil will hopefully encourage children to ask questions and become invested in the gardening process.

KDI Alignment: A1, A5, C17, D21, D22, G45, G46, G49, G51

Learning Focus: Scientific Inquiry, Comparison, Reasoning

Activity 4: Equity + Access Conversations

Before discussing food access:

- Have conversations with the children to see what they understand about where food comes from.
- Invite children to share their experiences with grocery stores or markets
- Introduce the idea that not all neighborhoods look the same through stories and books.

Educators may:

- Educators may wish to explore the broader ideas of environmental justice and food access as background knowledge.
  - Environmental justice includes the idea that all communities should have access to healthy food and clean water.
  - In some communities, families may have fewer grocery stores nearby or may have difficulty accessing fresh foods due to transportation or cost.
- For preschool children, these ideas can be explored through conversations about fairness, community helpers, and where food comes from. Gardening activities, farmers' markets, food sharing, and community gardens can help children begin to understand how communities work together to make sure everyone has access to healthy foods.

Vocabulary

- Equity
- Include
- Share
- Fairness
- Environmental justice
- Community
- Neighbors
- Community Helpers
- Transportation
- Healthy food
- Clean water

Materials

- Photos of gardens, farms, and markets from diverse communities

Instructions

- Read books about growing food such as community gardens, farms, and farmers market.
- Talk about fairness and how everyone needs healthy food to grow.
- Explore where food comes from, such as the grocery store, local gardens, local and distant farms, farmers market.
- Connect how food grown at the center can help the community, such as food donations and sharing harvests.

Ask children questions and keep the conversation going by sharing information:

- *"Who helps grow our food?"*
- *"How can we be thankful and careful with food?"*
- *"Who helps us make food in our community?"*
- *"Some places have lots of stores with fruits and vegetables."*
- *Some neighborhoods grow food in gardens so families can share."*
- *"Food helps our bodies grow strong."*

Engaging in discussions about how food grows, how it gets from the garden to the grocery store, and how growing our own food can help support food equity for all gives a deep purpose to the garden and the processes to plan, plant, tend to, and harvest it.

KDI Alignment: B10, B11, D21, D22, H55, H58

Learning Focus: Empathy, Social Awareness, Justice

Activity 5: Reuse + Design Challenge

Before designing planters with reused materials:

- Discuss what “reuse” means
- Practice building with recycled materials in the block area
- Introduce simple design thinking language, such as plan, build, test, and fix.

Educators may:

- Want to introduce basic tool safety if using child-safe scissors
  - Model which materials (cardboard, paper, some fabrics) may be able to be cut with child-safe scissors
  - Model which materials may need help from a teacher with adult scissors (heavier plastic).
- Want to engage families or coworkers in helping collect recycled materials for children to use

This activity is intended to help children see how reused, recycled materials can be used to create planters for seeds or tiny seedlings.

Vocabulary

- Reuse
- Recycle
- Plan
- Build
- Test
- Fix
- Design
- Capacity
- Depth
- Drainage
- Moisture

Materials

- Reused containers
- Cardboard
- Fabric scraps
- Soil
- Seeds or tiny seedlings

Instructions

- Invite children to design planters using reused materials.
- Build upon the initial experiences children have with using recycled materials to build creations in the block area.
- Discuss why reuse helps the Earth and how creativity can solve problems.
- Discuss what plants need to grow and how their creations can support the seed or seedling to get what it needs (light, air, moisture).

Narrate children's actions and ask questions:

- *"You chose to turn an old milk jug into a planter. What's your plan?"*
- *"How can we use this again as a planter?"*
- *"How do you want your planter to look or feel?"*
- *"Can we mix different materials together to create a planter?"*
- *"How can we reuse or share materials so that everyone has enough?"*

By inviting children to think creatively about how they can create planters from recycled materials, we help them learn about the process of recycling and reducing waste. We also reinforce their view of themselves as engineers and problem-solvers, with hands-on experiences that help them to see how their planter either supports or restricts a seed's growth.

KDI Alignment: A2, A3, A4, C17, F40, G47, G50

Learning Focus: Sustainability, Creativity, Engineering Thinking

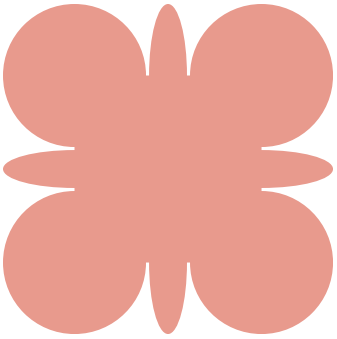
What Learning Looks Like for Preschoolers

- Exploring garden materials or spaces independently
- Making choices about which materials or tools to use
- Pretending or engaging in imaginative play with natural materials
- Asking questions or making predictions about plants
- Initiating care routines (watering, checking soil, gentle handling)

As You Engage in Garden Learning, You May See

- Sharing observations with peers or adults
- Using new vocabulary related to weather, plants, or growth
- Reminding peers of garden agreements
- Explaining what plants need and why
- Reflecting on changes over time through drawings, words, or storytelling

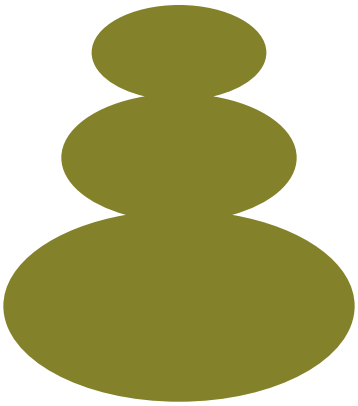
Voices in the Garden



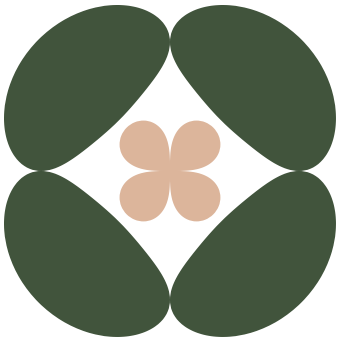
Two children disagree about whether to plant flowers or vegetables. Their teacher facilitates a group discussion, encouraging each child to share their reasons. The class votes and decides to plant both, learning that compromise and shared decision-making strengthen the community.

Reflective Pause

- Whose voices are centered in our garden decisions?
- How does our plan reflect children's cultures and lived experiences?
- Am I allowing children real agency rather than symbolic choice?



Teacher Language + Scaffolding



Educator language should be intentional, descriptive, and affirming. Examples include:

- “What do you notice about this plant today?”
- “What do you think this plant might need?”
- “How can we care for this together?”
- “I noticed you waited for a turn. That was helpful.”

Make Eye Contact

Get on the child’s level and make eye contact to get their attention before making statements or asking questions.

Use Descriptive Language

Describe what you are doing as you move throughout your day. Hearing language that describes an action while it’s taking place helps children to learn new vocabulary.

Describe what the children are doing. Simply noticing what they are doing and sitting near them will likely help them express what they are doing. This can lead to extended conversations and deepen

Ask Questions and Keep the Conversation Going

Often, children are very excited to share their thoughts, plans, and questions. Creating a classroom environment where children feel connected to educators and comfortable asking and answering questions enables children to thrive. Talking with children about their experiences helps educators to learn what children already know and what they hope to learn.

Create Invitations to Play

Set out a few simple materials and invite the children to explore. This provides many opportunities to learn what children are interested in and how you can connect new concepts to knowledge they already have.

Gardening Vocabulary

- **Tool:** Something we use to help us work or care for plants
- **Pot/Container:** A place where plants can grow
- **Seed:** A baby plant waiting to grow
- **Soil:** The dirt plants need to live
- **Water:** What plants drink to grow
- **Gentle:** Using soft, careful hands
- **Choice:** Picking what you like or want
- **Care:** Helping something stay healthy

Gardening Book List

- *Up in the Garden and Down in the Dirt* – Kate Messner
- *The Tiny Seed* – Eric Carle
- *The Curious Garden* – Peter Brown
- *Garden Day!* – Candice Ransom
- *My Garden* – Kevin Henkes
- *Eating the Alphabet* – Lois Ehlert
- *A Seed Is Sleepy* – Dianna Hutts Aston
- *The Ugly Vegetables* – Grace Lin
- *Green Green: A Community Gardening Story* - Marie Lamba
- *Mara Plants a Seed* - Rober Furrow
- *Here Are The Seeds* - JaNay Brown-Wood
- *Growing Food in the Garden* - Catherine Stier
- *Lola Plants a Garden* - Anna McQuinn
- *Secrets of the Vegetable Garden* - Carron Brown
- *In Our Garden* - Pat Zietlow Miller
- *Pumpkin Circle: The Story of A Garden* - George Levenson
- *Garden Walk* - Virginia Brimhall Snow
- *Errol's Garden* - Gillian Hibbs
- *Rooftop Garden* - Danna Smith
- *One Little Lot: The 1-2-3's of An Urban Garden* - Diane C. Mullen
- *How To Say Hello to a Worm* - Kari Percival

Read outdoors or near plants. Revisit books often and connect illustrations to real materials children can touch. Ensure that all children and classroom languages are represented in books.

Common Barriers + Support Strategies

Preschoolers bring increased independence, strong opinions, and bigger bodies into the garden space. With that growth comes new challenges.

Naming these barriers helps educators plan proactively while maintaining the relational foundation of this toolkit.

Children Eating Soil or Unwashed Produce

Children are curious, impulsive, and might find it hard to wait to sample what they've grown.

What Helps:

- Establish clear agreements before entering the garden
- Teach explicitly: "We only eat food after washing."
- Model food washing routines every time
- Keep snack separate from garden play

Consistency builds safety habits.

Unsafe Tool Use (e.g., Shovels, Trowels)

Children engage in creative, big body play and may use tools as props.

What Helps:

- Model tool safety indoors before taking them outdoors
- Demonstrate how to carry tools (point down, handle-first)
- Limit number of tools available
- Create a designated digging area
- Role-play safe and unsafe examples

If children misuse tools, pause the activity and reteach expectations rather than removing access entirely.

Digging Up Plants

Curiosity about roots, misunderstanding of plant care, and sensory exploration may lead children to pull plants out of the ground.

What Helps:

- Designate a “dig zone” separate from planted areas
- Teach the difference between exploring soil and protecting plants
- Invite supervised root exploration when appropriate

Children often need concrete boundaries.

Conflict During Decision-Making

Voting and planning can bring strong feelings for young children.

What Helps:

- Practice voting in low-stakes situations first
- Emphasize that all ideas matter
- Introduce compromise (planting both flowers and vegetables)
- Reflect feelings aloud

Garden planning is a real-life laboratory for social-emotional learning.

Limited Outdoor Space

Some programs lack raised beds or open yards.

What Helps:

- Use containers, windowsills, or mobile planters
- Grow herbs indoors
- Explore soil investigations inside
- Visit community green spaces if available

Gardens are defined by care, not size.

Weather Disruptions

Rain, heat, or cold may interrupt plans.

What Helps:

- Move observations indoors
- Use photos to revisit previous learning experiences
- Track weather patterns as part of learning
- Frame weather as part of the garden system

Unpredictability is part of working with young children.

Fear of "Not Knowing Enough"

Educators may feel unsure answering children's questions.

What Helps:

- Model curiosity: "Let's find out together!"
- Research together using books
- Invite family or community expertise
- Emphasize the learning process over correct answers

Garden-based learning thrives when educators and children work together.

Reframing the Challenge

Many of the behaviors that feel like barriers are just children's excitement and curiosity.

When Behavior Feels Overwhelming

- Pause and offer positive intent.
- Build connection through shared experiences and conversation.
- Revisit expectations.
- Simplify the experience if needed.

Garden learning should feel regulated and not chaotic.

Family Engagement

Amplify Child Voices	Share children's quotes, drawings, or predictions about the garden, such as *"I think the plant is thirsty because the soil looks dry."* Display these publicly or send them home to spark conversation.
Connect Culture + Food	Invite families to share a favorite vegetable, herb, or dish or a story about gardening, farming, or food traditions.
Invite Noticing	Suggest families notice gardens, trees, or food spaces in their community, such as grocery stores, farmers markets, community gardens, balcony plants, sidewalk weeds, or window herbs Children can report back through drawings or discussion.
Encourage Feedback	Ask families reflective questions such as, "What did your child talk about at home this week?" or "What interests are you noticing?" Use responses to inform future garden planning and decisions.
Share Decisions + Celebrate Learning	Communicate how children's ideas shaped the garden, such as *"The class voted to grow both flowers and vegetables."* This helps families see children as capable contributors.

GROWING TOGETHER

Embedding Gardening into Learning

When educators incorporate gardening into learning environments, they affirm that access to nature, sustainability education, and environmental care is a right, not a privilege. Gardening becomes more than an activity, it becomes a shared practice that supports curiosity, stewardship, and connection to place.

Introductory gardening experiences should focus first on building comfort in the outdoor environment and strengthening relationships, with the land, with one another, and with the learning process itself. Educators and learners can work together to identify barriers to spending time outdoors and develop creative solutions that make gardening accessible and meaningful for everyone.

This section explores ways to deepen and extend gardening across age groups by documenting learning, engaging with social and environmental justice topics, and making sustainable choices in the garden and classroom. Together, these practices help gardening become an integrated part of everyday learning.

Documenting Learning

Documentation makes learning visible. It helps educators notice growth that may otherwise go unseen.

Garden documentation does not need to be elaborate.

Photograph the Process, Not Just the Harvest

Capture children's hands touching soil, the moments of connection that happen within gardening care routines, and the simple joys of children making discoveries.

Record Children's Words

Children's voices reflect their thinking and learning.

"I think the plant is thirsty" or "The soil looks dry. I think we need to give the plants some water."

Date Observations

Track changes over time.

Revisit earlier photos and quotes with children.

Invite Reflection

Ask questions, such as "What has changed?" and "What do you remember?"

Share Small Moments With Families

One photo. One sentence. One observation.

Documentation is not about display. It is about honoring the learning that unfolds slowly.

Sustainable Swaps

The following sustainable swaps model environmental care and demonstrate that meaningful garden-based learning does not require new or expensive materials. These swaps also reinforce equity by making gardening accessible in all settings.

Instead of	Try This Sustainable Swap
Plastic pots	Reused yogurt cups, cans, or food containers with drainage holes
Store-bought planters	Cardboard boxes lined with paper, fabric grow bags
New garden tools	Repurposed kitchen scoops, spoons, paintbrushes
Commercial soil trays	Shallow reused trays or baking pans
Plastic spray bottles	Refilled, clearly labeled reused spray bottles
Disposable wipes	Washable cloths or fabric scraps for leaf care
Buying decorations	Natural materials (sticks, stones, leaves) for garden markers

Educators are encouraged to talk aloud about these choices using simple language such as, “We are reusing this so we don’t waste.”

Adapting Across Seasons + Spaces

WINTER

If It's Winter

- Grow herbs indoors near a window
- Explore soil investigations inside
- Observe seasonal changes outdoors briefly
- Track light patterns and temperature

Winter invites observation and waiting.

If It's Very Hot

- Water early in the morning
- Provide shade and hydration
- Shorten outdoor visits
- Observe signs of plant stress

Heat becomes part of the inquiry.

SUMMER

RAINY

If It's Rainy

- Observe puddles and drainage
- Track how water changes soil
- Listen to rain sounds

Weather is part of the system.

If You Have No Outdoor Space

- Use reused containers indoors
- Grow microgreens or herbs
- Visit local green spaces
- Study seeds and root systems

Gardens are defined by care, not size.

LACK OF NATURE

Closing Reflection

Garden-based learning is not a program to complete, it is a relationship to tend. As this foundational toolkit comes to a close, educators are invited to pause, reflect, and notice how their understanding of gardening with children may have shifted.

Perhaps confidence has grown.

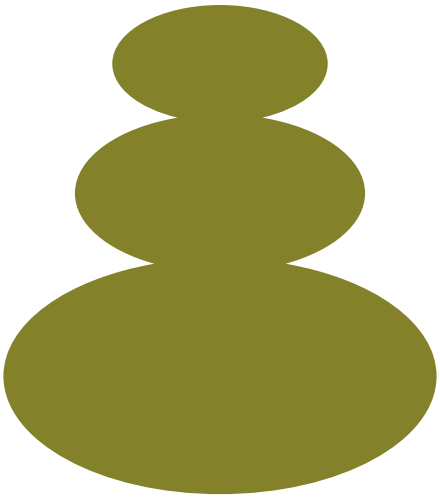
Perhaps curiosity has deepened.

Perhaps there is greater comfort with not knowing, with slowing down, with letting children lead.

The garden reminds us that learning does not move in straight lines. It unfolds through seasons of abundance and uncertainty, through waiting, care, and unexpected change. In the same way, children's learning (and educators' growth) emerges through presence, responsiveness, and trust in the process rather than control over outcomes.

This toolkit establishes a shared starting place: a commitment to relationships, equity, and care. From here, every interaction with soil, water, plants, and people becomes an opportunity to practice these values in real and meaningful ways.

Reflective Pause



- How has my relationship to nature (or to teaching outdoors) shifted through this work
- What moments of curiosity, calm, or connection stood out most for children?
- Where did I notice myself letting go of control or expectations?
- How am I honoring children's voices, cultures, and ways of engaging?
- What does care look like in our garden community right now?

Next Steps: Moving Through the Garden Cycle

With this foundation in place, educators are ready to move forward into the next phases of the garden cycle: **Planning, Planting, Tending, and Harvesting**. Each phase builds on the values established here, slowing down, noticing together, and centering relationships over results.

Next steps may include:

- Co-planning with children based on their interests and questions
- Making collective decisions about what and how to grow
- Deepening care routines and shared responsibility
- Reflecting on harvests that include learning, connection, and community…not just food

Educators are encouraged to return to this foundational module whenever new children, families, or educators join the community, or whenever the garden feels uncertain or rushed. Foundations are not left behind, they are revisited, strengthened, and re-rooted over time.

A Final Note

You do not need to be an expert gardener to grow something meaningful with children. What matters most is **attention, care, and a willingness to learn alongside them**.

The garden is ready when you are.

And it will keep teaching…season after season.

The work is not in growing perfect plants. It is in growing relationships that last beyond the season.

This toolkit is intentionally flexible. Educators are encouraged to adapt experiences based on children's interests, climate, space, and community context.