



**Georgia Dept  
of Early Care  
and Learning**  
BRIGHT FROM THE START

# Getting Started: Georgia Farm to Early Care and Education Guide

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## **Chapter 2: Exploring Gardening with Young Children**



# Introduction: Gardening with Children

Hands-on gardening activities are engaging, sensory learning experiences that show children where food comes from. These activities could include planting seeds on a windowsill, watering plants in an outdoor garden, or harvesting fruits and vegetables when ripe.

Gardening is always an experiment — sometimes it works better than others and that is part of the fun! Take time to ask questions, explore, and make discoveries about the natural world alongside the children.

**Research shows that gardening supports children's physical, social, and emotional development.**



## **Physical Development and Motor Skills**

Children develop both gross and fine motor skills through meaningful garden tasks. (GELDS: PDM5, PDM6)



## **Social and Emotional Development**

Children work cooperatively with others to complete large garden tasks. (SED4)



## **Approaches to Play and Learning**

Through exploring and asking questions, children build interest and curiosity about the natural world. (APL2)



## **Communication, Language and Literacy**

New vocabulary is developed through unique and meaningful real-world experiences. (CLL2)

**The garden provides a real world context for exploring math, science, social studies, and art ideas.**



## **Math**

Mathematic concepts of number, patterns, shape, and measurement have essential meaning in the natural world. (CD-MA1, CD-MA3, CD-MA4)



## **Science**

Children build knowledge related to the living things they share their environment with. (CD-SC3)



## **Social Studies**

Through growing food, children build a connection to their greater community. (CD-SS2)



## **Creative Development**

The natural world provides inspiration for exploring colors and visual art. (CD-CR2)

## **The following overview will get you started!**

Also, every county has a Cooperative Extension office - and they love helping schools! You can find your local extension office by going to:

[extension.uga.edu/county-offices.html](http://extension.uga.edu/county-offices.html) OR [fvsu.edu/about-fort-valley-state-university/academics/college-of-agriculture-family-sciences-and-technology/outreachextension/](http://fvsu.edu/about-fort-valley-state-university/academics/college-of-agriculture-family-sciences-and-technology/outreachextension/)

# Growing an Indoor Garden



Growing indoors can be a fun and easy way to teach children about how plants grow!

Whether indoors or out, plants need four things to grow:

- ✓ Soil
- ✓ Water
- ✓ Light
- ✓ Air



**Here are some things you may need to grow indoors and give your plants everything they need:**

- Recycled containers with drainage holes (yogurt cups, tin cans, milk cartons, etc)
- Potting soil or compost
- Small cup or spray bottle to water plants
- Saucer to place under container to catch excess water
- A sunny windowsill

## Give it a try!

### Grow a Bean in a Bag

This method is great for watching seeds grow (or germinate). Seeds can grow in small bags for children to take home or large plastic zip bags for the classroom window.

**What to Plant** Lima beans (or other large seeds like spinach, squash, cantaloupe)

**Where to Plant** In a plastic zip bag with a folded, damp paper towel

#### How to Maintain



**Soil**  
No soil is needed for seeds to germinate.



**Water**  
Keep towel damp by spraying with water when needed.



**Light/Air**  
Hang the bag in a window with masking tape.

**Next** When the plants have outgrown the bag, they can be carefully planted in a larger container with the roots in soil and the stems and leaves stretching up.

### Grow Vegetables or Herbs in a Container Garden

Many vegetables and hardy herbs can be grown by seed in a container garden inside.

**What to Plant** Seeds for crops with shallow or short roots (such as lettuce, radishes, and spinach) or hardy herbs (such as basil or dill)

**Where to Plant** In containers with small holes so it will drain (yogurt cups, milk cartons, etc). Simply poke a few small holes in the bottom of a container

#### How to Maintain



**Soil**  
Plant the seed slightly under the surface of potting soil.



**Water**  
Water when the top of the soil feels dry (excess water will drain).



**Light/Air**  
Place on a sunny windowsill.

**Next** If the plants outgrow their container, they can be carefully planted in a larger container.



## Grow Peas on a Fork Trellis

Children love watching the tendrils of pea plants wrap around a trellis as the plant grows up!

**What to Plant** Pea seeds

**Where to Plant** In containers with drainage holes (yogurt cups, milk cartons, etc) and with a fork to serve as a trellis for the peas to grow up

### How to Maintain



**Soil**  
Plant the seed slightly under the surface of potting soil.



**Water**  
Water when the top of the soil feels dry, excess water will drain.



**Light/Air**  
Place on a sunny windowsill.

**Next** The shoots and pods of the pea plant are yummy to try!

## Sprout Sweet Potato Vines

While these are not edible, it is fun for children to see that some plants don't grow from seeds. These vines regenerate from other parts of the plant!

**What to Plant** Organic sweet potato with four toothpicks around the middle (note: organic sweet potatoes may be more likely to sprout. Some conventionally grown sweet potatoes have been sprayed to retard sprouting.)

**Where to Plant** In a clear cup of water, with the pointy end down in the water and the blunt end out of the water

### How to Maintain



**Soil**  
No soil is needed for the sweet potato to sprout.



**Water**  
Refill the water in the cup when necessary.



**Light/Air**  
Place on a sunny windowsill.

**Next** After one or two weeks, roots and vines will begin to grow.

# Outdoor Gardening: Where, When, and What to Plant

Growing a garden outdoors is a great way to learn alongside children. Plants may thrive and you can celebrate together. If they don't, you can work together to figure out why! Either way, gardening connects us to the seasons in the natural world and builds an appreciation for the farmers that produce the foods that we eat.



## Getting Started Gather Your Garden Team

Invite staff, parents, and community members to be a part of deciding where, when, and what to plant. It is valuable to gather input and ideas from the broader community. Also, different members of the community may be able to offer time, energy, money, or in-kind donations to planting and maintaining the garden.

## Deciding Where to Plant

**Find the perfect place for your garden!** Consider these three things:

### Available Sunlight:

It is important that the location of the garden receives as much sunlight as possible throughout the day — between six to eight hours ideally. On a sunny day, visit the garden a couple times throughout the day to see where the shade falls from trees and buildings. Any area that is not in the shade for most of the day would be a good one for the garden.

### Proximity to Water:

Consider where the nearest water source is — whether it is an outdoor spigot or hose or if the watering cans will come from inside.

### Accessibility:

The best location for a garden is a space that is easy for young children to walk to. Choose a spot that children, families and staff already walk by every day — even if it's small.

**Next:** Once the location is chosen, seeds can be planted directly in the ground or raised beds can be built up above the ground.



**Raised Beds**

Raised garden beds are built up above the ground using wood logs or cedar for the sides of the bed (not pressure treated lumber) and then the beds are filled with soil and compost. Many of the materials for a raised bed can be donated by a nursery center or hardware store.



**Pros:** Fewer weeds, easier to reach, defines garden space, keeps feet out of the garden



**Cons:** Needs consistent watering



**In-Ground Beds**

Seeds can also be planted directly in the ground once any grass or ground cover is raked away. In this case, it may be help to test the soil that you will be planting in. The local extension office can provide a soil testing kit and the results will explain what could be added to your soil from more nutrients, such as compost.



**Pros:** Affordable, requires less watering



**Cons:** More likely to grow weeds, may be stepped on without defined borders



**Container Gardens**

Gardens can be grown in containers big and small, including pots, wagons, an old sandbox, or gallon milk jugs. Plants will grow in just about any container that is deep enough and has drainage holes for excess water.



**Pros:** Advantages: affordable, uses containers you already have, allows for creativity



**Cons:** Needs consistent watering, remember to make holes for drainage



## Deciding When and What to Plant

There are many options of what can be grown in a garden. Here are some hardy favorites that are easy to maintain:

Herb, fruit, and berry gardens are perennial plants that come back year after year. The plants selected for the seasonal garden, on the other hand, will complete their life cycle within just a few months of either the warm or cool season.



### Herb Garden

An herb garden is perfect for young children because herbs have distinct smells, tastes, and textures. The herbs we chose below are hardy and prolific so many children can harvest from them. Additionally, we chose herbs that are perennial and require little maintenance.

**Favorites:** mint, rosemary, thyme, oregano, lavender, sage, chives



### Fruit or Berry Garden

Fruit and berry gardens give young children the opportunity to see a flower turn into a fruit protecting the seeds inside. They do not produce quite as much as other edible plants but they are fun to taste when they ripen! They also remain in the garden for years.

**Favorites:** strawberries, blueberries, fruit trees like figs and apples



### Flower Garden

Flower gardens are beautiful and attract birds and bees to the garden. Flowers of every color of the rainbow can be planted. Some flowers will grow taller than young children and some are even edible!

**Favorites:** nasturtiums (edible), sunflowers, butterfly bush



### Seasonal Garden

A seasonal garden is one that is planted and lasts only for the season, until the frost comes or until it gets too hot for the plants to survive. See some of our favorites below:

#### Cool Weather Crops:

Plant in the fall or early spring

- Leafy greens (lettuce, kale, chard, spinach)
- Radishes
- Carrots
- Broccoli
- Sugar Snap Peas

#### Warm Weather Crops:

Plant after last frost in mid-April

- Bell peppers
- Cucumbers
- Tomatoes
- Okra
- Cantaloupe
- Sweet Potato

Additionally, you can choose to plant either seeds or seedlings that have been started by a local farmer or nursery.



Seeds



**Pros:** Cheaper



**Cons:** Small to work with, lower germination rate, longer time to harvest



Seedlings



**Pros:** Greater success rate, shorter time to harvest



**Cons:** More expensive

**For more detailed information on what to plant and when,** use the Georgia Planting Calendar (see Appendix H). For ideas about theme gardens (such as a salsa garden), visit: <http://extension.uga.edu/programs-services/school-garden-resources/theme-gardens.html>

# How to Plant, Care, and Harvest with Young Children

Children learn responsibility when they care for a garden. There are many ways for young children to participate in the care of the garden. Most garden activities are easiest and most engaging when done in small groups of about five to six children at a time.



Here some examples of how children of different ages can help with garden tasks:

	ONE YEAR OLDS	TWO YEAR OLDS	THREE YEAR OLDS	FOUR YEAR OLDS	FIVE YEAR OLDS
<b>Planting</b>	Touch and feel variety of seeds	Sort seeds by size and shape	Plant large seeds where directed	Plant small seeds where directed	Plant small seeds by measuring or using a guide
<b>Adding Compost</b>	Touch and feel different types of soil	Use hands to spread soil in bed	Use hand rakes to spread soil in bed	Use trowels to move soil in bed	Use trowels and containers to move soil from one area to another
<b>Removing Weeds</b>	Explore root systems of weeds pulled	Pull weeds with help of teacher	Pull weeds marked with flour	Identify weeds by matching a picture	Assist with thinning beds
<b>Watering Plants</b>	Explore water through play	Count the rainy days	Pour water from a filled yogurt cup onto plant roots	Fill a yogurt cup with water, walk to the bed, pour onto plant roots	Fill a small watering can with water, walk to the bed, pour onto plant roots
<b>Harvesting Produce</b>	Touch and feel variety of harvested plant parts	Sort or order harvest by size or shape	Harvest produce identified by teacher	Identify produce to harvest by matching a picture	Independently harvest a certain number of ripe produce
<b>Washing Produce</b>	Explore water through play	Gently pat dry washed produce	Gently wash produce in running water and pat dry	Scrub root vegetables with an unused toothbrush	Wash leafy green vegetables in a salad spinner



## Planting with Children

Young children can participate in planting seeds and seedlings. Here are some tips:

### Mark Your Space

Children work best with their own personal space. Give each child their own spot along the perimeter of the garden bed.

### Mark the Spots

There are many ways to mark where the seeds or seedlings should be planted, such as placing a spot of baking flour on top of the soil. Also, a “guide” can be made out of cardstock with holes punched at intervals so children can drop seeds through the holes.

### No Tools Necessary

The holes for most seeds and seedlings will not be deep enough to need trowels. Children can simply use one finger to make a tiny hole that is either as deep as the seed is high or as deep as the root ball is long.



### Harvesting

With some care and patience, the garden will be ready to harvest!

**Young children** can participate by using both hands to gently harvest the vegetables that are ripe and ready.

**Teachers** can show them how to gently harvest and then they can try!



### Washing

Produce will need a little water and scrubbing to get the dirt off.

**Young children** can participate by washing vegetables gently with their hands in running water and then patting them dry with a paper towel. Root vegetables can also be scrubbed with an unused toothbrush and leafy green vegetables can be washed in a salad spinner.



## Maintenance Tasks with Children

### Adding Compost and Soil

Compost is organic matter that is rich in nutrients for plants. It is beneficial to add to garden beds at the beginning of the season.

**Young children** can participate by using child-size digging tools and containers to move soil from one area to another and then use their hands to spread the soil in the garden bed.

### Removing Weeds

It can be challenging to identify weeds (or unwanted plants) from the garden. When you find out which plants are weeds, they should be removed to allow space for the surrounding plants to thrive.

**Young children** can participate by pulling up the roots of the plants. **Adults** can help by sprinkling baking flour on the weeds so they are easy to find for children.

### Watering

There are many ways to water a garden — like waiting for rainfall, hand-watering, setting up a sprinkler attached to a hose, or installing a drip irrigation system.

**Young children** can participate by checking how damp the soil feels to decide if the garden needs water. Then, children can use small watering cans (or other containers like yogurt cups) to carry water from the source to the garden and carefully pour water on the soil near the plants roots.

This method of watering one small cup at a time is not the most efficient but children enjoy the practice with their gross and fine motor skills.

# Simple Outdoor Gardening Activities by GELDS Domain

Outdoor activities are designed to build curiosity and encourage exploration. These activities help children make discoveries about the world around them. By spending time outside, children can experience the seasons as they change. They observe the effect that the changing weather has on all of the living things - the plants that grow, the animals that help them, and humans that eat them too!



**Give it a try!** 

## Outdoor Observation



**Gather** — Sit or stand with all students in a circle in an open place outdoors.

**Ask** — “What is the same and what is different from our last visit to this space?”

**Observe** — Give children a few silent seconds to just listen and look to the world around them.

**Share** — Provide time for children to share what they observed.

**Activities that can be done outside in a garden area with minimal materials or planning. See Appendix B for more information on aligning with the GELDS.**

	ONE AND TWO YEAR OLDS	THREE YEAR OLDS	FOUR YEAR OLDS	FIVE YEAR OLDS
<b>Mathematic Cognitive Development</b>	Use size words to describe things found in the garden	Find objects of different shapes in the garden	Count the number of worms found in the garden	Sort fallen leaves by color, shape, or size
<b>Science Cognitive Development</b>	Observe and explore with the senses (sight, touch, smell), and show curiosity about the garden	Use a magnifying glass to look closer at things in the garden	Record observations of plants and animals through drawings and dictation	Explore water, soil, sand, and mud and build understanding of what plants need
<b>Communication, Language Literacy</b>	Listen to and follow simple directions for garden tasks	Ask and answer questions about what is observed in the garden	Describe garden activities using expanded sentences and details	Build vocabulary through activities, books, and conversations about the garden
<b>Creative Development</b>	Listen to rhymes, finger plays, songs, and stories about the garden	Describe what colors are seen in the garden through the different seasons	Do a yoga sequence to show how plants grow	Use crayons to draw lines/shapes and watercolors to fill in color of plants in the garden
<b>Physical Development and Motor Skills</b>	Develop balance and coordination bending and standing to/from the garden bed	Use tools like trowels to determine their purpose	Use fingers to sort seeds by color, shape, and size	Practice safety rules around the garden



## Tips for Behavior Management in the Outdoor Garden

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Young children love exploring outside! You may need to help refocus children's attention, energy level, and volume level from what they are accustomed to on the playground to an energy level that is more appropriate for an outdoor classroom where plants are growing, animals are living, and children are learning.

Here are some tips to help children make decisions that are best for the growing and learning environment outdoors:

### Dividing into Small Groups

All tasks are easier to accomplish and more engaging for children when they are completed in small groups of five to six children. See more in "How to Plant, Care, and Harvest with Young Children" on page 23.

### Naming the Space

Name the outdoor garden space something that reminds children that it is different than the playground space. Names could be the Garden, the Outdoor Classroom, the Living Laboratory, etc.

### Gathering Together

It is important to have a gathering space near the garden so children know exactly where to go when they arrive in the space and exactly where to go when they are called back to the space. Ideally, it is an area where students can sit or stand in a circle and see each other.

### Starting with a Quiet Activity

To set the tone, ask children to sit in a circle and listen quietly for garden sounds (one minute for every year old is about how long children can sit quietly). How many sounds can they hear? Hold a finger up for every new sound they hear.

### Setting Boundaries

If there is a not fence around the garden area where children can explore, be sure to show children exactly what the boundaries are before they leave the whole group to explore on their own or in small groups.

### Modeling Safety

Always ensure adult supervision and model tasks for children, particularly when tools are being used.

### Practicing a "Call Back"

Decide on a fun call and response for the garden. Then when children hear the teacher make the call, they'll know to come right back to the circle.



# Tips for Safety in the Outdoor Garden

Young children should always be closely supervised in the garden. Here are some tips to help keep children safe while they are exploring outdoors:

## Washing Hands

Because the garden is growing food that we will eat -- children should wash hands **before and after** visiting the garden. If possible, set up an outdoor washing station to make handwashing easy.

### Wet and Lather

Wet hands using warm running water.  
Lather soap up to elbows.

### Rub and Scrub

Rub and scrub for 20 seconds on the backs of hands, wrists, between fingers, and under fingernails.

### Rinse and Dry

Rinse under warm running water. Dry with paper towels. Turn off running water with a paper towel, not bare hands.

## Reviewing Allergies

Review all known allergies with the school nurse and parents and prepare a school protocol in case of emergencies. Also, be alert to any signs of allergic reactions. This will be further discussed in “Tasting with Young Children.”

## Avoiding Stinging Insects

Practice identifying bees and other stinging insects with children. Be aware of their favorite habitats and ways to avoid them as well.

## Using Water

Make sure you have a potable (safe to drink) water source to irrigate your edible garden.

[For more information on how to test your water see \[www.epa.gov/dwreginfo/lead-drinking-water-schools-and-childcare-facilities\]\(http://www.epa.gov/dwreginfo/lead-drinking-water-schools-and-childcare-facilities\)](http://www.epa.gov/dwreginfo/lead-drinking-water-schools-and-childcare-facilities)

## Avoiding Chemicals

We recommend gardening with organic methods. Be aware of what is in your potting soil, fertilizers, pest control, and weed control. If you do use chemicals, keep them out of reach of children at all times. Even organic chemicals and fertilizers can harm children if consumed.



## Using Tools

Even young children can use small hand tools with appropriate supervision. Slowly introduce each new hand tool to children with the steps below.

**Note:** Many garden tasks do not require tools.

### Divide into Small Groups

Small groups of five or six children are ideal for hands-on activities, particularly when the tasks involve using tools such as trowels.

### Mark Your Space

It is important for children to know their boundaries for their bodies and for their tool, including where to place their tool when it is at rest.

### Model the Task

With children's attention focused on the teacher, model the task that children will complete independently. Remind students that tools are designed for specific tasks and they are not to be used as toys.

### Supervise Closely

Tools should be used with direct supervision of an adult at all times.

### Store Appropriately

When tools are not in use, they should be stored out of reach of children.

When long-handled tools or power tools are necessary, they should be used when children are not nearby.

## Eating Garden Produce

Teach children to never eat any plants without permission from an adult. Additionally, be careful to ensure that children do not eat soil or any other natural elements from the garden.

[For information on poisonous plants see Appendix G.](#)