Gardening with young children: It's easier than you think!

by Laura McFarland

In September, the children in my class planted snow peas in a garden plot on the playground. After days of watering and watching, the children saw tiny green shoots peeking above the soil.

A few days later, the children could see that the plants were developing into vines. Each day they watched how the vines wrapped their tendrils around the trellis and crept slowly higher and higher. The appearance of the first pink bloom was cause for a celebration!

After the Thanksgiving break, they rushed outside. "It's getting really tall!" shouted Natalie. "Wow, look at the pink flowers!" Steven exclaimed.

After the flowers bloomed, small green pea pods began to grow. Soon the crisp snow peas were ready to pick. The children couldn't wait to arrive at school so that they could pick the peas that were ready.

One morning, we had picked so many peas that we decided to have them for snack. The children helped rinse and dry them. Most of the children tasted them. "It's crunchy!" said Angelica. "It's kind of sweet" Jose stated. Robert devoured at least 10 of them!

The next week, the children harvested lettuce we had planted. They helped wash the lettuce, tore it into bite-sized pieces in a bowl, and added some of our snow peas. We had a salad! Many children ate it with gusto. Even the children who had never touched a vegetable before were at least giving it a chance.

Gardening with preschoolers and even toddlers is not as hard as many teachers think. You don't need a green thumb, just some basic knowledge.

What can children learn through gardening experiences?

Gardening with children offers countless benefits (Tilgner 1988). Children enhance many skills, such as the following:

- fine-motor control through planting seeds, picking ripe vegetables and pulling weeds,
- large-motor control through digging, raking, and hoeing the soil, and watering the plants,
- social skills through working and cooperating with adults and other children to care for the garden, and
- emotional competence by giving children a sense of pride in what they can do.

Gardening helps children develop language through discussions about what to plant,

where to plant, and what kinds of insects are roaming in the garden. Teachers can introduce new vocabulary, such as *fertilizer, compost, roots,* and *bloom.*

Gardening also stimulates cognitive growth and science processing skills. Children develop observation skills as they see what is growing. They learn to compare and classify as they observe similarities and differences in seeds, plants, flowers and insects. As children observe what grows and what doesn't, they learn to infer, predict, hypothesize, and problem solve about the growth process (Lind 2000).

For example, the children in my class observed that the lettuce plants on one side of our garden were taller and fuller than those on the other side. Why might that be? We talked about soil properties, amount of water each side of the garden received, different insects we saw on the plants, and amount of sunlight. After much discussion, we noticed that the side with smaller plants had much more shade. So it was the amount of sunlight that made the difference.

One simple observation by a 3-year-old led us to discuss and explore many topics of interest. Thus, gardening lends itself well to *emergent curriculum,* in which teachers plan activities based on the children's developing interests. Gardening helps children learn many things, including the following (Lind 2000):

- how things grow, properties of seeds, soil, water, and sunlight;
- discovery of new insects, including ladybugs, bees, and butterflies as well as caterpillars and worms;
- respect for the environment;
- where food actually comes from (It doesn't just appear in the grocery store!);
- how things in nature are interconnected (bees, birds, soil, water, plants); and
- which foods are healthy.

How do you start a classroom garden?

The basic need is an area to plant seeds. If you have ample space outside, find an area that gets plenty of sunlight, about eight hours a day. It need not be a large space. If you don't have an area outside, try planting in large flower pots that you can set out in the sun.

Because the soil needs to be healthy for plants to grow well, add organic material. Children can help work it into the ground (Tilgner 1988).

The supplies are simple: shovels, hoes, rakes, and watering cans. You may want at least one adult-sized tool and a couple of smaller, child-sized tools (Tilgner 1988).

Plant vegetables and herbs that are easy to grow and need little maintenance. In the fall, radishes, snow peas, lettuce, and greens grow well. In the spring, plant cucumber, squash, basil, tomatoes, okra, eggplant, beans, and black-eyed peas. If you have a small space, pick just one or two things to plant. Beans are usually a sure bet, and they grow fast.

Before planting anything, make sure nothing about it is poisonous to children. With toddlers, you might avoid planting potatoes, for example, because the vines can be hazardous if eaten.

Let the children do as much as possible. They can take turns putting seeds in the soil and watering them. Don't worry if seeds are not exactly spaced. The process of developing the garden is just as, if not more, important than the product you get.

Don't be discouraged if something doesn't grow well. Use the experience as an opportunity for learning. The children can brainstorm why something didn't grow well, and suggest possible solutions about how they can do it differently next time.

Use plants as a science material. Plant herbs, and have children smell, taste and describe them. Have children explore vegetables, inside and out. Examine the skins, flesh, and seeds of your edibles. Let children observe the process of plants dying and decaying. By planting seeds, watering plants, watching them grow, and then watching them die and decompose, children can learn about the life cycle.

If you don't feel comfortable with gardening, just make it as simple as possible. Ask parents if they would lend their expertise or help. Ask parents or local gardening stores to donate seeds and supplies. Read more about gardening. The resources at the end of this article give more detailed instructions.

LET THE CHILDREN DO
AS MUCH AS POSSIBLE.

Extend gardening to cooking

Once your garden starts producing edibles, don't be afraid to do some cooking or food preparation activities to test what you have grown. Children are often excited about trying the foods they help grow. Even somewhat less common vegetables may appeal to children if they have been involved in their growth and preparation.

Recently, in my classroom garden, we picked eggplant, a food that most of the 2-year-olds had never tried. We explored the texture of the skin, examined the seeds inside, and then chopped it and cooked it in a little olive oil. *All* the children were eager to try it, and one child actually ate three bowls of it!

We have also made avocado salsa with the fresh cilantro from the garden. It was a huge hit.

One child who rarely ate vegetables took a bite of the collard greens we had grown. He exclaimed to his mother, "I tried the collard greens!" If children don't want to eat the vegetables they have grown, at least you have exposed them to new foods. It often takes many exposures to a new food before a child will try it.

Getting children involved

Children as young as toddlers will enjoy gardening. Toddlers are perfectly capable of putting seeds in the soil (with close supervision) and watering plants with small watering cans. Toddlers will be fascinated by the bugs and birds that the garden attracts.

Older children can have a more in-depth involvement in the gardening process. For example, 4- and 5-year-olds will be able to learn the difference between weeds and useful plants and can help pull out the weeds. They can also do more of the digging, raking, and tilling of the soil.

You may find that some children are not as interested in the garden as others. That's fine. For some children, however, the garden will become a major source of fascination and wonder. Some children will develop a strong passion for gardening and nature in general.

Once you get the gardening started, it will be worth the effort. So, what are you waiting for? Get those seeds planted!

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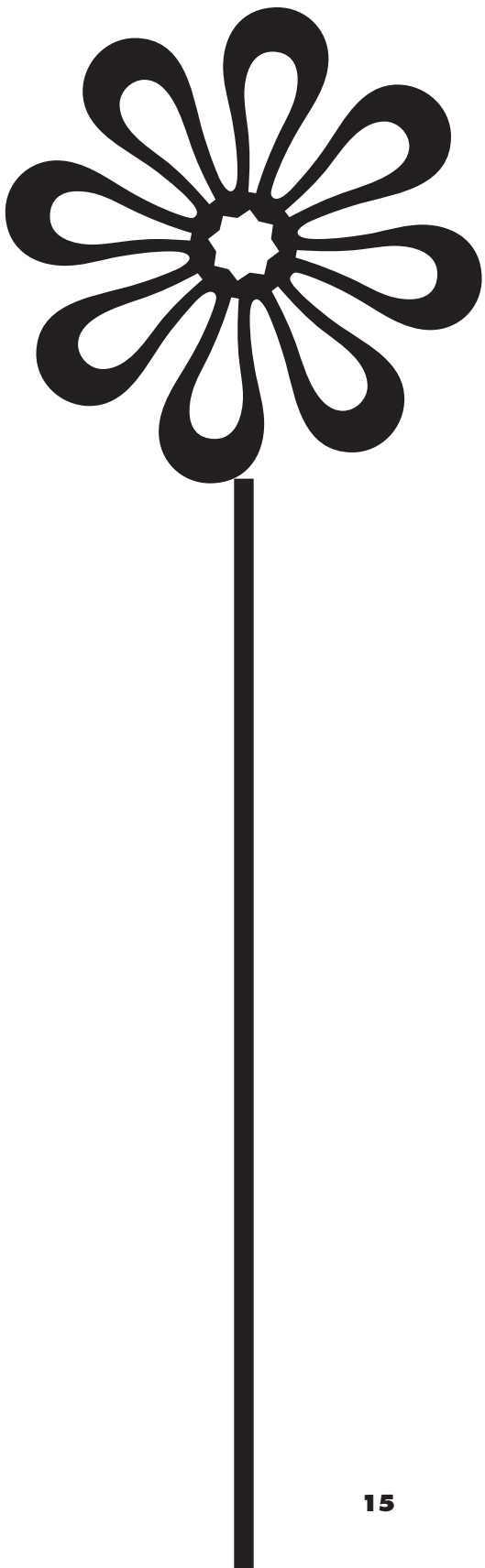

Activities
that inspire young gardeners

Try these easy, clean, and dirty gardening activities that support the concepts in "Gardening with young children: It's easier than you think" on page 12.

Begin your garden study by observing the places plants grow. Let children dictate a list of the places they see plants growing. Talk about the kinds of plants they see. Ask whether they are used as food for animals or people or as decoration. Encourage the children to think of other reasons for gardens—soothing landscape, soil conservation, habitat for animals, snow and wind shield, or scientific investigation, for example.

Soil rainbow

Soil anchors plants and provides the water and nutrients plants need to grow. But all soils are different, each composed of different ingredients. The main ingredient is rock that has been broken down into tiny particles over time. Other ingredients include decomposing animal and plant parts and microorganisms, animals too small to see without a microscope.

Help children examine soil with a magnifying glass. They might be able to identify sand, rocks, clay, twigs, seeds, earthworms, dead and live insects, and trash like paper or plastic.

Make a soil rainbow comparing soils gathered from different locations.

Here's what you need:

- plastic, zipper-closed bags
- self-stick labels
- magnifying glass

1. Write each child's name on a label.
2. Attach the label to a bag.
3. Instruct the children to place a few tablespoons of soil from their yards or a neighborhood park in their bags.
4. When the children bring the bags back to class, spread them out on a table top and compare the soils.
5. Help the children arrange the bags by color and then by composition.

Garden mural

Collect picture books, brochures, and photographs to share with children. Make a mural of unusual gardens.

Here's what you need:

- home and garden magazines
- scissors
- mural paper
- glue

1. Encourage the children to cut out pictures of unusual gardens.
2. Glue the pictures to the mural paper.

3. Talk with the children about how and why each kind of garden is important.
4. Try to include pictures of hanging gardens, desert landscapes, lawns, plants at shopping malls, water gardens, gardens along highways, forests, and produce farms.

Plant trash

Help children understand that some materials decompose when they die. When a plant dies, for example, the microorganisms in the soil turn it into compost. Other materials don't decompose so readily.

Here's what you need:

- shovels
- 2 inorganic trash items like a soda can, a Styrofoam cup, or a coat hanger
- 2 organic or degradable items like eggshells, orange peel, or a slice of bread
- plant markers

1. Determine a good place to dig four 12-inch-deep holes. Make the holes about 6 inches in diameter.
2. Bury four items: two that are degradable and two that are not.
3. Mark the holes and leave them undisturbed for about three weeks.
4. Return to the holes and dig the items up.
5. Compare the condition of the items. Which started to decompose? Could the children see worms or other insects that might have eaten the organic materials?

Garden plots and vessels

As the children discovered making the garden mural, gardens aren't always large, neat rectangular plots. Take a neighborhood walk and track the kinds and shapes of gardens you pass. Watch for unusual plant pots and other vessels: hanging baskets, window boxes, large buckets, urns, ponds, and raised beds. In some neighborhoods gardens grow in old bathtubs!

Plant needs are generally simple: a vessel appropriate to the size of the plant, soil, water, and sun. Invite children (and their parents) to donate a container recycled from another use: microwave dishes, a cooking pot, a wire basket, or even an old shoe.

Use the containers to plant seeds or cuttings from existing plants. As the plants grow, have conversations with the children about their containers and plants.

Tire tower for potatoes

Potatoes require deep soil and a tower of old car tires provides the depth.

Here's what you need:

- 4 to 6 old car tires
- garden soil
- compost
- sprouted seed potatoes
- shovel
- organic fertilizer

1. Prepare the seed potatoes. Cut sprouted potatoes so that there is an eye in each piece. Harden the potatoes by storing the pieces in a paper sack in a dry place for a couple of days. They are then ready to plant.
2. Pick a level garden area that gets full sun.
3. Mix the garden soil with the compost.
4. Set two of the tires on the ground, one on top of the other. Fill them with the garden mixture.
5. Plant the seed potatoes.
6. As the plants grow, carefully add another tire to the stack. Fill the area around the plants with more soil. You'll bury some of the plant but make sure some of the leaves stay above the ground.
7. Add soil and as many as three more tires, one at a time, as the plants grow. If the plants stop making flowers, stop adding more tires.
8. After flowering, the plant will die back. When it looks dead, it's time to harvest. Lift the tires off the stack and dig through the soil to find your potatoes.

Note: Fertilize regularly while the plants are flowering. Mix liquid organic fertilizer (like fish emulsion) in a watering can. Fertilize the tire tower at least every other week.

Vegetables of a different color

Plan regular tasting parties with unusual vegetables and their more familiar family members. Look for black lettuce, white pumpkins, blue corn and blue corn chips, white eggplant, lemon cucumbers, yellow pear tomatoes, and golden potatoes. Engage the senses—look, smell, and then taste. Make predictions about taste differences. Older children might even enjoy blindfold taste tests.

Tepees and trellises

Plants that climb as a vine, like beans and cucumbers, are space efficient and fun to grow. Make a frame to support this vertical growth.

Here's what you need:

- 7-foot-long poles
- measuring tape
- heavy twine
- scissors
- shovels

1. Gather poles. Bamboo is often available either from a gardening store or a generous neighbor. Rustic tepees and trellises can also be built from saplings or fallen branches.
2. Use a shovel and tape measure to draw a large circle—about 7 feet in diameter—in the gardening area.
3. Prepare the soil along the line for planting.
4. Line up the poles side-by-side. Make sure the bottom ends are even.
5. Use twine to lash the poles together about 12 inches from the top.
6. Gather several children to lift the poles upright. Spread the loose ends apart evenly around the prepared circle.
7. When the poles are stable, weave horizontal lines with twine. Start by tying one end of the twine about 5 inches above the ground to the first pole. Wrap the twine around, move to the next pole and wrap once or twice. Continue wrapping until you get to the seventh pole.
8. At the seventh pole (the one next to the starting pole), turn around and start wrapping in the opposite direction, leaving a door into the tepee. Make the second line of twine about 10 inches above the first.
9. Continue weaving horizontal lines about 10 inches apart until you reach the top.
10. Plant bean seeds around the outside base of the tepee. Bean seeds are planted about 3 inches apart and 1/2 inch deep.

Variation: Use fallen limbs and twine to make a standing trellis. Make sure two of the limbs are sturdy enough to support cross branches. Dig the side frames into the ground or hang them from the eaves of a building.

Toad home

Welcome toads to your garden. They'll eat garden pests in exchange for a bit of water and shelter.

Here's what you need:

- 2 large clay pots
- garden area with loose soil or mulch
- shallow pan for water

1. Locate a quiet, shady area of the garden.
2. Turn the pots on their sides and place about 12 inches apart. Bury the lower half of each pot in loose soil.
3. Place a shallow water bowl near the pots. Make sure there is always water in the bowl; an empty bowl will send your toads looking for a new home.
4. Avoid disturbing these toad homes but watch for the toads in the early morning when they look for food and lap dew from leaves.

Scarecrow

Elaborate and simple scarecrows add color and humor to gardens—and they may help keep bird pests away. A scarecrow must have a base—a length of wood that is anchored in the ground. Beyond that, building the scarecrow is an exercise in creativity.

Here's what you need:

- lumber or tree branches
- drill and bits
- wood screws
- clothes
- plastic bags or straw stuffing
- safety pins
- ball
- permanent markers
- scissors
- hat

1. Find a 5- to 7-foot-long piece of lumber to be the scarecrow's spine. The spine will be anchored in the ground and the scarecrow will hang from the spine.
2. Place the spine lumber on the ground.
3. Gather shorter lengths of lumber scrap or tree branches. Screw these in place along the spine. Place one about 10 inches from the top (shoulders) and another about 20 inches lower (hips).
4. Screw two legs from the ends of the hips.
5. Gather clothes for the scarecrow.
6. Put a shirt on the shoulder frame. Stuff the shirt—front, back, and arms—with plastic bags or straw.

7. Add pants or a skirt to the frame. Attach to the shirt with safety pins. If using pants, stuff the pant legs. If your scarecrow will wear a skirt, let it billow in the breeze.
8. Extra clothing can include boots, gloves, an apron, vest, or handkerchief.
9. Make the head from an old ball. Cut a slit in the ball to fit the lumber spine and slide the ball in place.
10. Use permanent markers to make a face on the ball. Or you could reuse an old Halloween mask.
11. Tie a hat, old wig, or scarf to the scarecrow's head.
12. Decide where to place the scarecrow in the garden. Dig a hole and anchor the end of spine in the ground.

Alternative: Skip the lumber pieces and simply stuff old clothing with plastic bags, newspaper, or straw. Stuff an old sack to make the head, paint on a face, and pin all the clothes together. Let the scarecrow relax in an old lawn chair.

Toilet paper seed tape

If you plan to build an in-the-ground garden bed with children, let them help with the whole process. Provide appropriate tools for turning soil, fertilizing, and watering; containers for weeds and other garden wastes; and systems for sowing seeds.

Large seeds—beans and pumpkin, for example—can easily be spaced in the soil with fingers. Smaller seeds—like tomatoes, radishes, and lettuce—are hard to control. You can buy seed tape at gardening stores with seeds appropriately spaced on biodegradable tape. But making seed tape works just as well—and it's fun.

Here's what you need:

- packets of gelatin
- mixing bowl and spoon
- water
- seeds
- white, unscented toilet paper
- ruler
- scissors
- cardboard scrap
- marker
- cotton swab or small paintbrush

1. Cover the work area with newspaper if it needs to be protected.
2. Measure the garden plot and determine the row length for the vegetable or flower you are planting.
3. Examine the seed packet to determine the appropriate spacing for that plant. Cut the cardboard to the length of the space recommended.
4. Unroll the toilet paper to the length of the garden row.
5. Using the cardboard spacer, make evenly spaced marks along the center of the toilet paper roll.
6. Mix the gelatin with enough water to make a soupy paste.
7. Dip the cotton swab or paintbrush into the gelatin and dab each spot on the toilet paper.
8. Place a seed onto each of the gelatin paste dots. Let the paste dry.
9. When it's time to plant, make a trench in the soil at the recommended depth for the seed—1/2 inch for carrots, for example.
10. Set the toilet paper seed tape in the trench and cover with fine soil. A neat row of plants will sprout.