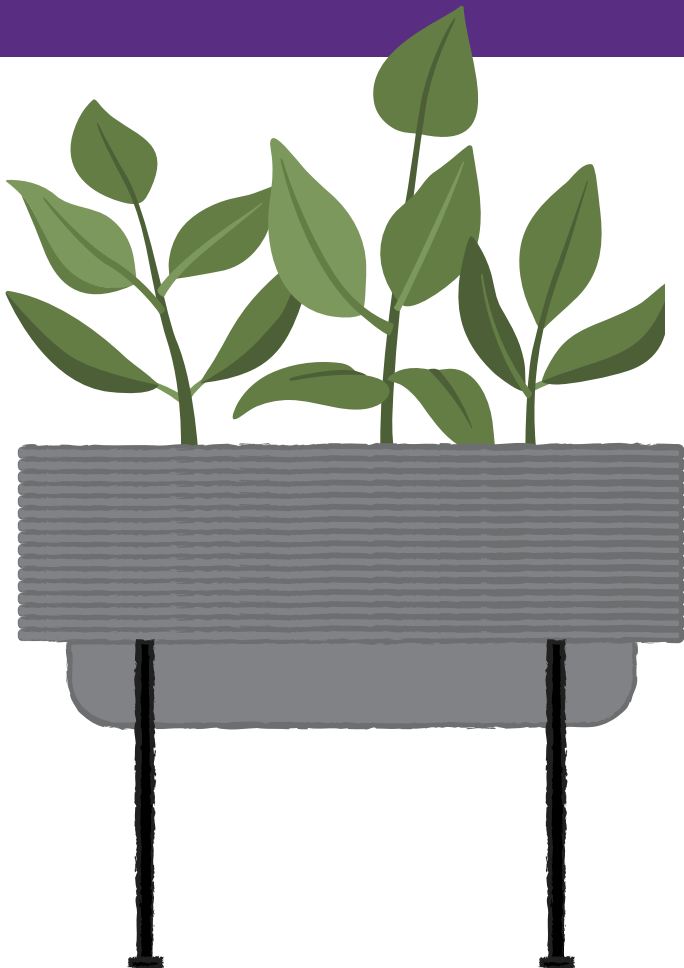


ELEMENTARY
EDUCATORS' GUIDE TO

Container Gardens



Big or little, one or many,
edibles or flowering plants –
container gardens are bursting with
potential, and the perfect way to
begin your garden adventures!

Container gardens are an excellent way to dive into the world of school gardening. As long as you have adequate light and access to water, planting in containers gives you and your students the opportunity to grow a wide variety of crops like vegetables, herbs, flowers, and even fruit trees. Best of all, you don't need a huge amount of space, time, or money to get started.



Crescent Garden is one of the premier container gardening providers and a pioneer in self-watering solutions. We are run by people who are professional, passionate and always in our customer's corner.

As a lead brand trusted by contractors, plants experts, independent garden centers and nurseries worldwide, we offer containers and accessories distinguished by refined design and breakthrough innovation that lasts and lasts for successful, inspired gardening. At Crescent Garden, we believe that planters should work for you, not the other way around. We understand what works best for both healthy plants and the people who love them. Learn more at crescentgarden.com.



For 40 years, KidsGardening has led the youth gardening movement by creating opportunities for kids to play, learn, and grow through gardening. The national nonprofit provides grant funding, inspiration, community connections, and original educational resources to reach more than 3.8 million kids each year. Learn more at KidsGardening.org.





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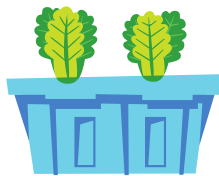
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What is a Container Garden?

A container garden can be as simple as a collection of pots of herbs in a window box that you rotate seasonally or as elaborate as an array of large, outdoor tubs with perennial plants. The options for containers are limitless, ranging from half whiskey barrels to plastic pots to a pair of old work boots filled with soil! Any container that can hold soil and has drainage holes for excess water to escape is a potential candidate to build your garden.



Some of the benefits of container gardening include:

- **Maximizing your space.** You can take advantage of small areas like sunny window ledges and courtyards. You can even grow container plants indoors if enough light is available.
- **Testing the waters.** Container gardens let you try your hand at gardening without committing lots of resources.
- **Portability.** If you're faced with challenges — vandalism and theft, upcoming construction, etc. — that could displace your in-ground garden plots, you can design container gardens that are easy to move on a daily or seasonal basis.
- **Soil control.** You can fill your containers with a quality potting mix and rest assured that your harvest is safe from soil-borne contaminants. This is especially important where levels of lead and other soil pollutants might make in-ground gardens a concern.
- **Pavement greening.** Perhaps your schoolyard is void of soil and green space. You can place containers on concrete or cement surfaces and grow an ample harvest of vegetables or enhance your space with colorful flowers.
- **Accessibility.** Container gardens can be flexible in placement and designed in a way to make it easier for those with impaired mobility to access.

Connecting Container Gardens to Your Curriculum

Container gardens offer a plethora of opportunities for students to observe, explore, investigate, and evaluate (and have fun too!). There are countless ways to connect container gardening lessons to your classroom standards and curriculum. Here are just a few examples:



Science – Because they allow more control over growing conditions, containers can be used to create scientific experiments with clear independent and dependent variables. Ideally, you can place the containers where there's easy access from your classroom to support frequent observation. Containers can host plants that may not thrive in your native conditions, allowing students to expand their knowledge about other ecosystems. You can even give kids a window into the world of plant roots by cutting a hole in the side of a container and covering it with a piece of plexiglass — you can't do that with an in-ground garden!

Math – What better way to practice math than through practical application? Kids can measure the circumference and diameter of round pots, and the area and perimeter of square pots. They can calculate the volume of various containers to determine the amount of soil required to fill them, record water usage, track growth, weigh the harvest — the possibilities are endless!

Language Arts – Have kids create signs and plant labels (in English and in other languages too!). They can keep garden journals, tracking the weather, describing foliage and flower growth, and documenting pollinator visits. They can bring books to life by growing theme gardens that complement them. Sharpen students' persuasive skills by asking them to help you write letters for donations and support.

Social Studies/History – Container gardens can spark curiosity and inspire kids to research the origins and historical uses of common plants. Growing plants with cultural and culinary significance for your students and members of your community inspires cross-cultural and multi-generational learning. Exploring how container gardening has been used as a growing technique in challenging ecosystems creates connections between history and geography.

Fine Arts – Kids can exercise their imagination by upcycling household products to create garden containers. Use containers as a canvas for painting and mosaics opens up opportunities for self-expression. Growing plants that engage the senses, including displays of different colors, textures, and scents, can expand kids' concepts of art and encourage multimedia explorations.

Steps to Planting a Container Garden

Starting your container garden can be as easy as 1, 2, 3: Gather, Plant, Maintain



Step 1. Gather Supplies, Including Plants



Containers

Your choice of containers will depend on several factors, including the space you have available, what you want to grow, and the resources you have to spend. You may be able to repurpose items like an old sand pail or a 5-gallon bucket (with holes drilled for drainage). Or you may want to invest in larger containers for more planting space.

However, when it comes to containers, if it can hold soil, you can probably grow something in it! Let your (and your students') imagination run wild when pondering options. An old toy truck, cookware, children's swimming pools — the possibilities are endless! Remember that every container will need about $\frac{1}{4}$ " to $\frac{1}{2}$ " diameter holes in the bottom to allow excess water to drain. If using a self-watering container, drainage may be already contained in the system. Check the specifications for your container before adding holes. You can even add wheels to your container or place it on a dolly so your garden can be mobile.

Material: Traditional planting containers are usually made of clay, ceramic, plastic, wood, metal, or fabric ("grow bags"). Consider the following when choosing the material:

- Water will pass through containers that are made from porous materials, such as wood and terra cotta, meaning that the soil in them will dry out more quickly than the soil in containers made from non-porous materials like plastic and glazed ceramic. This can be a benefit if you're growing plants that need very well-drained soil, such as succulents. However, it can mean more frequent watering for thirsty plants like tomatoes.
- If you garden in a cold climate and your potted plants will spend the winter outside, avoid using clay or ceramic containers because soil expands when it freezes, which may cause the containers to crack. Check the warranty on containers for outdoor use in colder climates. If using breakable pots, empty the soil and store the containers out of the weather.
- If you'll be growing edible plants, choose containers that are food-safe and have never been used to hold toxic chemicals. Your school food service staff may be happy to give you empty 5-gallon pails that once held bulk condiments like ketchup.
- By choosing containers made from a variety of materials, students can record and compare plant growth, water use, and other factors.

Size: Containers must provide enough space for root growth, and different plants need different-sized pots. Large plants like tomatoes have deep roots and need a container 12 to 18” deep. Small plants, such as lettuce and herbs, can thrive in containers that are 6 to 8” deep.

Keep in mind that, in general, the smaller the container, the more often it will need watering, especially during hot, sunny weather.

Self-watering pots: Self-watering containers are great for avoiding the guesswork of how much water your plants need. The self-watering system is more water efficient, so great for hot, dry regions with limited water access, and schools needing a lower maintenance garden. Self-watering containers have a water reservoir which requires filling every few weeks (depending on the plant and weather). The soil soaks up water from the bottom, delivering the moisture directly to roots and giving plants a consistent level of moisture. There is also less chance of attracting fungus and disease by feeding plants directly through their roots and keeping water off leaves.

Other considerations: Ideally, you’ll locate your container garden in a spot where it is sheltered from the wind. Even so, top-heavy plants in lightweight pots tend to topple, so use heavyweight pots if this is a concern. If growing plants that need support, such as tomatoes, be sure your container can accommodate the trellis or other intended support. Finally, if you plan to have your students decorate the outside of the pots with paint or mosaics (a fun and popular activity!) it’s best to do this before you add soil and plants.

Potting Soil

When choosing the planting mix (aka growing media) for your containers, make sure to use a quality potting soil or soilless mix, rather than soil straight from the ground. These specialty mixes provide proper drainage and aeration, while still allowing adequate moisture retention. For reasons that can be explained by physics, even soil that is well-drained in the ground will not offer adequate drainage or aeration in a container.

Although some planting mixes contain actual soil, many “potting soils” are actually soilless; they’re made from a blend of peat, coir, bark, perlite, vermiculite, and/or other non-soil materials. Packaged mixes are usually pasteurized so they’re free of organisms that could cause damage to plant roots; this is especially a concern when you’re starting plants from seed. Some potting soil mixes also contain “starter” fertilizer that provides nutrients for a short time after planting. Not all mixes have this so check the bag to see if you’ll need to add fertilizer at planting time.



Plants

The final supplies to gather are your plants! Here are a few questions to guide your process in choosing what plants to grow. Remember to involve your students in the decision-making; this builds excitement and encourages all the kids to be invested in their container garden adventure.

Do you want to start your plants from seed or from young seedlings?

Some plants are easy to grow from seed, and it's usually much less expensive to start your own plants if you have the time and resources. Easy-to-grow seeds include tomatoes, basil, marigolds, and zinnias.

Other plants are more challenging to start from seed (or are slower growing), including peppers, onions, and perennial herbs like rosemary; purchase seedlings of these plants to make sure there's enough time to see your plants through to harvest if you're limited by the school year calendar.

How much space do you have?

If you are using small containers, choose small, compact plants like herbs, leaf lettuces, and seasonal annuals like marigolds. Vining plants, like pumpkins and cucumbers, need plenty of room to grow. Some large plants, like pole beans, can be grown in containers in a relatively small space if you provide a trellis for them to climb.

How much sunlight do you have available?

Some plants love full sun, including marigolds, zinnias, basil, dill, and fruiting plants like peppers and tomatoes. Other plants can tolerate some shade, including lettuce and other leafy greens, cilantro, and coleus.

How often will you be able to water?

If you might need to go long weekends without watering your containers, look for plants that are a bit more drought tolerant, including native plants like coneflowers and Mediterranean herbs like sage. Also, consider using self-watering containers, described above. (Consider having students compare plants grown in regular containers vs. self-watering ones.)





Step 2. Plant Your Container Garden

Once you've gathered your supplies, it's time to plant! If you're planting up large containers, place them in their growing spot before planting. (Soil-filled pots can be heavy!) You can fill small pots anywhere and move them after planting.

Start by moistening the potting mix. The easiest way to do this is before you add it to the containers. Pour the potting mix into a large bucket, slowly add water, and mix it thoroughly until it's evenly moist but not soaking wet. If your planting mix doesn't contain starter fertilizer, you can mix in some slow-release fertilizer granules to it to keep your plants fed for the first few months.

Note: Don't add gravel or pottery shards to the bottom of the pots. Although it's a piece of advice you may have encountered as a way to improve drainage, this is a myth! For the best drainage, fill your containers uniformly with potting mix.

Scoop the moist potting soil into your containers. (Kids love this step!) If you are planting seeds, add soil to about 1" below the rim, then follow the directions listed on the seed packet. If you are planting seedlings, fill the container about 2/3 full. Then take the seedlings out of their pots, place them in the container, and add soil around the roots, making sure the seedlings are sitting at the same height as they were in their original pots. Aim to have the soil surface about an inch below the rim to prevent overflow when watering.

Gently water your new garden until water begins to drain from the bottom. Final step: Enjoy watching them grow!





3. Care for Your Container Garden



Check the container garden daily and engage students in monitoring and caring for plants. Each time you visit plants, look for signs of growth and any changes, such as developing flower buds.

Monitor soil moisture by putting your finger in the soil; generally, if the top inch of soil is dry, it's time to water. (Large containers and drought-tolerant plants can be allowed to dry out more.) A plant growing in a container requires more frequent watering than the same type of plant growing in the ground because they're growing in a limited volume of soil. During hot, dry weather, container plants may need daily watering. (A drip irrigation system with a timer is a labor-saving option.)

Keep an eye out for pest problems and nip them in the bud early. Many common pests can be kept under control by hand picking or washing off with a spray of water.

Finally, add fertilizer as needed. Plants growing in containers need a regular supply of nutrients. Follow the directions on the packaging to determine how often and how much fertilizer to apply.



Container Garden Design Tips

Now that you know the basics, here are a few additional design tips to help you dig into container gardening:

Group plants with similar needs. If you are planting several different types of plants in one container, make sure they have the same sunlight and water requirements. For example, thyme, rosemary, and sage prefer full sun and very well-drained soil.

Mix plant shapes. A classic container design is to place a tall plant in the center, a few bushy plants, and some trailing plants around the perimeter.

Choose a color scheme, using the color wheel as inspiration. For example, combine plants with flowers or foliage in warm colors (red, orange, and yellow) with those in complementary colors (purple/yellow, orange/blue). Or follow a monochromatic color scheme that features shades of one color.

Engage all the senses. Include fragrant mints and other herbs along with fun-to-touch plants like lamb's ear, with its soft, fuzzy foliage. Ornamental grasses add to the visual and soundscape as they sway and rustle in the wind.

Add accessories. Fairy furniture, hidden toys, blocks, wind catchers, handmade signs, painted rocks, and rain gauges add to the fun.

Assign themes. Bring books to life for your young gardeners by planting gardens with ties to a favorite book. Or grow recipe ingredients for pizza or salsa (details below).

Big or little, one or many, edibles or flowering plants – container gardens are bursting with potential. Let your kids' imaginations run wild with the design and then sit back and watch as they observe, explore, and practice caring for their little slice of nature. Container gardens are a perfect way to begin your garden adventures!



Salad Bowl Garden

How do you get kids excited about eating salad? Let them grow their own ingredients! Many salad veggies are well-suited for container growing because they don't need much space, grow quickly, and can be grown in spring and fall months when school is in session. Position your salad bowl garden near your school's cafeteria or kitchen for easy harvest and preparation.

Plant options include:

- Greens such as lettuce, spinach, kale, and Swiss chard
- Herbs like basil, cilantro, and dill (tasty in the salad or in salad dressing)
- Radishes
- Carrots
- Tomatoes

Choosing containers:

Most leafy greens, herbs, and radishes grow well in 6" deep containers. Carrots require 12" deep containers. Most tomatoes prefer 18" to 24" deep containers, though compact varieties can be grown in smaller pots.

Fun extras:

Grow a few edible flowers to give your salad a dash of color. Nasturtiums, pansies, and signet marigolds are good options.



Lesson Connections

Science – Teach kids about plant parts and make your own “plant parts” salad:

- Roots – carrots and radishes
- Leaves – lettuce, spinach, kale
- Flowers – broccoli, nasturtiums
- Fruit – tomatoes, peppers
- Seeds – sunflower seeds

Math – Make your own salad dressing using different-sized measuring cups and spoons. Then hold a special taste test.

Language Arts – Read about the different edible parts of plants in the books *Tops and Bottoms* by Janet Stevens or *Oliver’s Vegetables* by Vivian French.

Social Studies – Salads consisting of raw vegetables mixed with dressing date back to Ancient Roman times. Explore with kids the history of some famous salads (Greek salad, Cobb salad, Caesar salad, etc.) and ask them to interview friends and family to find out some of their favorite salad ingredients.

The Arts – Eat a rainbow! Salad fruits and veggies come in a spectrum of colors. Teach kids about the link between color and nutrients and the importance of eating a variety of different-colored fruits and vegetables every day. Have kids create a recipe for their own rainbow salad.

Hot or Not Salsa Garden

A versatile condiment, salsa can add a kick of flavor to a wide range of foods, from eggs to tacos, or be a quick dip for snacking. Fun and easy to make, salsa is a great option for young chefs. Offer them a variety of ingredients and let them get creative, making their salsa hot, medium, or mild.

Plant options include:

- Cilantro
- Green onions
- Onions
- Peppers (bell or hot)
- Tomatoes
- Tomatillos (Note: Tomatillos are not self-pollinating so you must have at least 2 plants to get fruit.)
- Garlic

Choosing containers:

Cilantro and green onions thrive in 6" deep pots. Onions, peppers, and compact tomato varieties need more room for their roots; look for containers 12" to 16" deep. Large varieties of tomatoes and tomatillos prefer 18" to 24" deep containers; 5-gallon buckets with drainage holes are an inexpensive option. Garlic can be grown in 8" deep pots; however, in most climates, garlic is planted in fall for a harvest the following summer.

Lesson Connections

Science – Why are foods spicy? Have kids investigate the chemicals that make some foods like peppers spicy, and also how our senses perceive them.

Math – Pepper and tomato seeds are big enough for most kids to count. Try estimating, counting, and comparing the number of seeds found in different-sized fruits (like cherry tomatoes vs. beefsteak tomatoes).

Language Arts – Read *I Will Never Not Ever Eat a Tomato* by Lauren Child and talk about what it is like to try new foods.

Social Studies – Tomatoes are botanically a fruit, but from a culinary perspective they're considered a vegetable because we eat them as part of a meal. The debate reached all the way to the Supreme Court! In the 1893 Nix vs. Hedden case, the justices declared tomatoes a vegetable. Ask your students to discuss whether tomatoes are a fruit or a vegetable.

The Arts – Salsa is the name of a dance and style of Latin music. Check out some salsa dance videos and give it a whirl.

Fun extras:

Tomatoes, tomatillos, and pepper plants frequently need support for best growth and to prevent toppling. Kids can practice their engineering skills by making their own stakes or trellis using upcycled materials like bamboo, wire, and wood scraps.



Pizza Garden

Since pizza is such a fan favorite, growing a pizza garden is a great way to get kids excited about gardening! As an added bonus, making a veggie-rich pizza is a nutritious way to enjoy this tasty treat. Making a pizza garden container kit for kids to take home is a great way to engage families and can even serve as a fun garden fundraiser.

Plant options include:

- Basil
- Oregano
- Onions
- Bell Peppers
- Tomatoes
- Garlic

Choosing containers:

Basil and oregano thrive in 6" deep pots. Onions, peppers, and compact tomato varieties need more room for their roots; look for containers 12" to 18" deep. Large tomatoes prefer 18" to 24" deep containers; 5-gallon buckets with drainage holes are an inexpensive option. Garlic can be grown in 8" deep pots; however, in most climates, garlic is planted in fall for a harvest the following summer.

Fun extras:

Have kids make labels that look like restaurant chalkboard signs to decorate the pizza garden.

Lesson Connections

Science – Learn about solar energy. Look for instructions on how to make a solar oven out of an old pizza box then use it to cook a pizza using the harvest from your garden.

Math – Ask kids to share their favorite pizza topping and then make a pie chart to display the results.

Language Arts – Dream up your own restaurant to serve your garden's pizza. Craft a name and menu, and then write an advertisement (to be used in print or in a script for a video) to attract customers.

Social Studies – Modern-day pizza had its start in Naples, Italy, and was brought to the United States by Italian immigrants. Have kids find Naples on a map and chart pizza's journey.

The Arts – Let kids use found natural materials (i.e., soil, twigs, leaves, acorns, sticks) to make "pizzas" in old pizza pans and pie pans. For an indoor activity, have them use craft materials and other repurposed items too.



Zoo Garden

There are many fun plants whose names are inspired by animals. Make your own plant “zoo” that features some of these engaging specimens. You may even get some real animals to visit too!

Plant options include:

- Bee balm
- Butterfly weed
- Catnip
- Kangaroo paws
- Lamb’s ear
- Monkey grass
- Zebra grass (dwarf)

Choosing containers:

Most of plant options above are perennials in many areas and, if roots are protected during the coldest winter months, they may continue to grow over multiple years. Choose containers that can be overwintered (such as those made from weatherproof plastic) that you protected during extremely cold weather or moved to a sheltered location.

Fun extras:

Create an inviting entrance for your Zoo Garden and add some plastic zoo animals. Include features that might help real animal visitors, like a small butterfly puddle or a bird feeder.

Lesson Connections

Science – Learn about plant (water, light, air, nutrients) and animal (food, shelter, water, air) needs and then determine if your container garden provides a good habitat for both. If not, brainstorm what you can add to fill those needs.

Math – Measure the heights of your animal-inspired plants and compare your findings to the heights of the animals they are named after. Are they shorter or taller?

Language Arts – Read the book *Plantzilla* by Jerdine Nolen. Make a Venn diagram showing how plant and animal needs are the same and different.

Social Studies – Make a fun map of your plant zoo to help guide visitors of your garden.

The Arts – Ask students to design a plant inspired by their favorite animal. Have them draw a picture of it and describe its basic characteristics and the environment it would grow in.



Prehistoric Dinosaur Garden

Create your own miniature dinosaur park by planting a container garden full of plants that originated when dinosaurs were alive. Plants such as ferns, palms, and horsetails can be used to recreate what the world may have looked like in prehistoric times. Many of these plants thrive in shade so a dinosaur garden may be a good option if your site has only a little sunlight available.

Plant options include:

- Ferns
- Horsetail/Equisetum
- Palms

Choosing containers:

The suggested dinosaur plants are all perennials and unless you specifically search for dwarf varieties they will be large, so choose a big container that will hold up over time. Depending on your location, your garden may also need to be protected during the coldest months, so consider choosing something that can be moved indoors seasonally.

Fun extras:

Scatter in some small toy dinosaurs for imaginative play. Leave a corner of your container garden unplanted to set up a mini “dig” site where you can hide dinosaur toys and fossil replicas.



Lesson Connections

Science – The earliest plants like ferns and horsetail do not make seeds. Instead, they reproduce by making spores. Teach kids that different plants have different ways of making new plants. Some plants like ferns make new plants through spores; others like pine trees make seeds in cones. The plants they are probably most familiar with are the ones that make seeds in flowers. You can also introduce them to propagation techniques like taking cuttings and division.

Math – Use graph paper to learn about scale by comparing the heights of different kinds of dinosaurs and humans.

Language Arts – Ask kids to write a story through the eyes of a dinosaur. They can use their dinosaur garden to help describe the setting.

Social Studies – Create a timeline starting during the Paleozoic period when the first land plants appeared (543 to 248 million years ago) to the present day to give kids a sense of how long your dinosaur garden plants have been on Earth.

The Arts – Have kids use leaves to make their own “fossils.” Press leaves into slabs of homemade salt dough and then remove and let them dry. Sprinkling coffee grounds or sand into the dough when making it gives fossils a more weathered look.

Sensory Garden

Plants come in all sorts of shapes, colors, and sizes, with seemingly infinite fragrances and tastes. Choosing plants that engage the senses and encourage interaction and exploration is a great way to get kids excited about their container garden. Your sensory garden can also serve as spot for kids to decompress and regulate as the plants capture their attention and connect them with nature.

Plant options include:

- Touch: celosia, lamb's ear, strawflower
- Taste: mint, stevia, strawberries
- Smell: basil, pineapple sage, scented geraniums
- Sight: calendula, marigolds, zinnias
- Sound: lesser quaking grass, love-in-a-mist, money plant

Choosing containers:

There are so many plants that can be used to engage the senses that container choice can be flexible. (Seed packets and plant labels often give the plant's size at maturity.) You can choose the plants you want to grow first and then look for a container that would be the best fit their growing needs, or you can choose the container first and then pick plants that would thrive in your chosen container.

Fun extras:

Place your sensory garden near a bench or seating area to encourage longer exploration and enjoyment of the plants. Add non-plant sensory objects like wind chimes, wind catchers, signs, and water features.

Lesson Connections

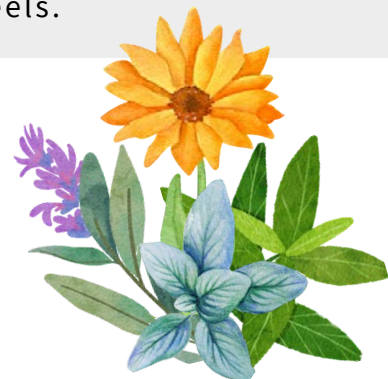
Science – Encourage kids to use senses other than sight for identification using a mystery bag. Place pieces of plants from your garden in a bag or box and ask kids to reach in and try to guess what plant is in the bag based on touch alone. Another alternative is to have them use their sense of smell.

Math – Look for different shapes in your garden or a nearby natural area – circles, triangles, squares, rectangles, ovals, and stars.

Language Arts – Teach kids about onomatopoeia – words that are spelled to phonetically resemble the sound they describe (buzz, plop, hiss). As a group, brainstorm a list of sounds you may hear in a garden or in nature.

Social Studies – As a community service project, create a small sensory container garden to donate to a local nursing home.

The Arts – Use repurposed items to make garden decorations that engage the senses. For example, rocks could be painted, old silverware could be crafted into wind chimes, milk cartons could become bird feeders, and plastic bottles could be used to make pinwheels.



Tea Garden

Sampling herbal teas is a fun garden activity for kids. With just a few supplies (pot for boiling water, tea strainer, and cups), it is an easy way to enjoy garden harvest — and usually faster than waiting for fruits or vegetables to mature. A garden tea party can be a great opportunity for friends and family to chat, connect, and relax too!

Plant options include:

- Bee balm
- Borage
- Cinnamon basil
- Chamomile
- Fennel
- Lemon balm
- Mint
- Sage

Choosing containers:

Most annual herbs, such as basil, grow well in containers at least 6" to 8" deep. Perennial herbs, such as bee balm and chamomile, will continue to grow over several seasons, so choose larger, weatherproof pots for these if you plan to overwinter them. When planting, group herbs that have similar light and water needs.

Fun extras:

Since some of the herbs may look similar (many are in the mint family), adding homemade plant labels helps keep them straight. If space allows, add a table and chairs for a tea party.

Lesson Connections

Science – Try making tea using different temperatures of water. Explore why temperature does or does not change the end product.

Math – Harvest some of the herb leaves and weigh them while they are still fresh. Then lay them on a screen to dry for a few weeks and then weigh them again. Have kids compare the results. What did they find? What changed?

Language Arts – Ask your young gardeners to create a recipe book of their favorite tea drinks to share with family and friends.

Social Studies – People all over the world drink tea; however they make it from different ingredients and drink it in different ways. Research how tea is made and enjoyed in multiple cultures. (Resource: *Teatime Around the World* by Denyse Waissbluth)

The Arts – Plan a tea party and create invitations and decorations for the big event. You could even have students paint teacups with garden-themed motifs.



Pollinator Garden

Pollinators are small but mighty animals that play a critical role in our environment. Their job is to move pollen from flower to flower and help plants make their fruits and seeds. More than 150 of our common food crops rely on pollinators. Unfortunately, land development has led to a decrease in habitat for many pollinators. Planting container gardens specifically designed for pollinators can help support their populations.

Plant options include:

Choose flowering plants that bloom throughout the growing season, such as:

- Bee balm
- Cosmos
- Dill
- Milkweed
- Salvia
- Zinnia

Choosing containers:

Container size and material can be very flexible depending on what plants you choose to grow.

Fun extras:

In addition to the nectar and pollen that plants provide as food, pollinators also need water and nesting sites to survive. Add butterfly puddles to provide a water source. Add host plants for larvae. Leave some leaf litter in your container to provide nesting spots.

Lesson Connections

Science – There are many different kinds of pollinators: bees, butterflies, beetles, hummingbirds, bats, moths, and flies. Learn more about these different pollinators and what kind of plants they visit.

Math – Honeybee hives are made up of honeycombs of hexagonal cells. Try making honeycombs using other shapes and compare them to hexagons. How do they compare? Research why hexagons make the most efficient use of materials.

Language Arts – Read the book *Bea's Bees* by Katherine Pryor or *The Thing About Bees: A Love Letter* by Shabazz Larkin. Ask students to write a persuasive paper about why we need pollinator gardens.

Social Studies – Learn about the differences between rural, urban, and suburban environments. Talk about the growth of urban and suburban development and ask students to consider what that means for pollinator habitats.

The Arts – Play the **Be the Bee** game. Have students make their own flowers and play games moving “pollen” from one flower to the next.



Rainbow Garden

Eat a rainbow! This message is not only fun, but it also explains that color can be an indicator of what vitamins and nutrients can be found in different fruits and vegetables. A diet that includes regular servings of colorful produce delivers lots of the vitamins, minerals, antioxidants, and fiber we need – along with tasty eating. Your container garden can be its own pot of gold if you use it to teach kids how to eat a rainbow.

Plant options include:

- **Red:** red lettuce, beets, radishes, tomatoes, red peppers
- **Orange:** carrots, orange peppers
- **Yellow:** yellow peppers
- **Green:** lettuce, spinach, kale, beans, broccoli
- **Blue/indigo/violet:** purple cabbage, radicchio, purple basil
- **White:** cauliflower, scallions, parsnips

Choosing containers:

The size of the container will depend on the veggies you choose to plant. If planting mostly greens, a container that is 6" to 8" deep is adequate. If you choose a variety of medium-sized plants, look for a planter that's 12" to 18" deep. Large vegetables like tomatoes, peppers, broccoli, and cauliflower, grow best in a pot that is 18" to 24" deep.

Fun extras:

A pot of fake gold coins adds fun to your rainbow garden. Add even more color by planting rainbow-colored annual flowers, such as zinnias, to liven up your veggies.

Lesson Connections

Science – Sunlight appears white or yellow to the eye, but it is actually made up of the full spectrum of colors. Use a prism to separate out the different wavelengths of light.

Math – Ask students to name their favorite fruit or vegetable and then make a bar graph to compile the results, sorted by color.

Language Arts – Ask kids to write an acrostic poem about fruits and vegetables using their favorite color as the anchor. For example:

- R – Raspberries, apples, strawberries
- E – Every day I try to eat at least one
- D – Delicious and delightful!

Social Studies – Ask students to pick a fruit or vegetable to research to discover its origin and historical uses, and learn where it is grown today.

The Arts – Introduce students to the color wheel and have them use pictures from old seed catalogs to make their own fruit and veggie color wheel.



Three Sisters Garden

Native peoples from different parts of North America have used a wide range of agricultural techniques. Perhaps the best known is the interplanting of corn, beans, and squash – a trio often referred to as the "Three Sisters." In a Three Sisters Garden, the three partners benefit one another. The tall corn stalks provide support for bean vines. The beans, like other legumes, have bacteria living on their roots that help them absorb or "fix" nitrogen from the air and convert it into a form that the other plants can use. And the large, prickly squash leaves deter animal pests and shade the soil, preventing weed growth. By choosing dwarf varieties of corn, beans, and squash, you can plant a Three Sisters container garden.

Plant options include:

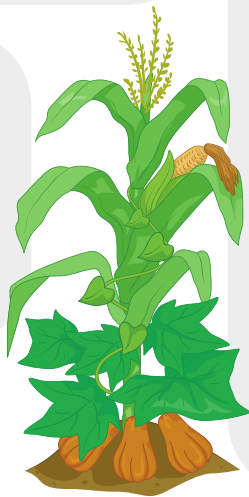
- Beans ('Blue Lake' bush beans and 'Trionfo Violetto' pole beans)
- Corn ('On Deck')
- Squash ('Bush Baby' and 'Raven')

Choosing containers:

Large, deep containers work best for the Three Sisters plants. You will most likely need multiple containers grouped together since even dwarf varieties of these plants are still fairly large. Pole beans grow into tall vines; plant them in a large container with the corn so they can climb the stalks (as they would in an in-ground garden). Or place the container of pole beans next to the container with corn and guide the vines to the corn stalks. Bush beans, as the name suggests, form shrubby plants.

Fun extras:

If you have multiple containers, arrange them so that kids have a path to explore between them.



Lesson Connections

Science – Use your Three Sisters Garden to talk about symbiotic (mutually beneficial) relationships in nature and why they are important. As a class or in groups, brainstorm additional examples of symbiotic relationships.

Math – Corn, beans, and squash are all very fast-growing plants. Measure and keep a journal documenting plant growth. Chart the results and compare.

Language Arts – Read *Let's Pop, Pop, Popcorn!* by Cynthia Schumerth and dive deeper into this classic snack. Nearly 20 percent of the world's food calories come from corn, and it is also used in many other products. Corn is one of the top crops grown in the United States. Challenge students to brainstorm (and/or research) some of the other common products we use that come from corn. Cornflakes and popcorn are a few that are obvious, but there are many more, including corn oil, corn syrup, fuel, plastics, and animal feed. Have students research where corn is grown in the United States and if it is grown in your state.

Social Studies – Explore the role and importance of the Three Sisters in Native cultures through stories, celebrations, and art. The [Haudenosaunee Guide for Educators](#) from the National Museum of the American Indian is a resource for more information.

The Arts – Make corn husk dolls and show students how kids used to engage in imaginative play before the invention of toy stores.