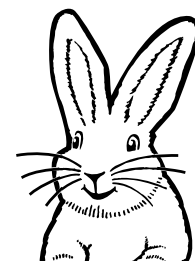




# Creating Gardens of Goodness

Annie's How-to Guide for  
Five Kinds of Children's Gardens

◆ **Written for Annie's by the Center for Ecoliteracy**





## Creating Gardens of Goodness

Cultivating a garden with children offers a life-affirming context for strengthening child-to-child, child-to-adult, and human-to-nature relationships. When working or playing in a garden, we all learn to slow down and connect with each other and our surroundings.

Whether your garden is a seed in a cup or an acre of fruit trees, gardening includes us in the cyclical rhythms of nature. Nature becomes our teacher as it continually demonstrates complex, subtle, and elegant life-sustaining practices.

Through gardening, we link the uncultivated world to our human place and absorb the evergreen lesson that we cannot control nature. By forming relationships with our uncultivated and cultivated places based upon a spirit of cooperation and reverence, our garden will do what nature does best: provide sustenance for all living beings.

We offer five examples of different gardens—from simple to complex—that can flourish at schools and other learning environments. It is our hope that at least one of these examples will fuel your motivation to garden with kids.

## 1. Windowsill Gardens..... 9

The simplicity of a seed in a cup sitting on a windowsill belies its capacity to elicit wonder and delight. A seed, a cup, soil, water, and sun are all that is required to start.

## 2. Vertical Gardens..... 17

In tight spaces, gardens can be structured to grow up and out. Vertical gardens teach that gardening is possible in very limited spaces and encourage thinking about growing food as infill even where space is at a premium.

## 3. Raised Beds and Container Gardens..... 27

When space is available but healthy soil is not—such as in rocky soils or locations where asphalt or concrete covers a schoolyard—intensive gardening can occur in generous amounts of soil in raised beds and containers.

## 4. Cold Frames, Tunnels, and Greenhouses..... 39

Each of these structures is designed to provide weather protection, extend the growing season, and maximize solar efficiency. Students are exposed to the notion that plants can grow all year in most locations across the country, even in northern and snowy climates.

## 5. Large-Scale Gardens..... 49

When there is sufficient commitment, land, and funding, a large-scale garden offers opportunities to grow a wide diversity of plants, introduce farm animals into the mix, and produce enough food to help nourish students or even the wider community.

## Getting Started

For creating most gardens, you will have better success if you engage the community from the beginning. Consider holding a gathering to generate design ideas and build commitment from students, parents, teachers, and community members as well as gardening experts. We suggest that you start small, keep the kids at the center of the process, and seek out parents and other community members who can help locate materials and construct the garden.

## Becoming an Urban Farmer

Even if you start with an old garbage can as your garden container, you are beginning down the path of urban farming. We hope these garden ideas will help fuel your enthusiasm for gardening with children. Once you and the kids harvest your first crop—which may be no more than a handful of strawberries—and realize that you can grow some of your own food, you will join the ranks of those who are yearning to increase their self-sufficiency, and find joy and satisfaction in the simple act of feeding themselves and their community.

## Harvesting

Harvest time is when you will reap the satisfaction of all your hard work and deep attention to the garden. If plants are harvested properly, they will continue to produce delicious fruits and vegetables over a longer period of time. Each time you gather your bounty, wash, weigh, and store it, so you can enjoy it later. Harvesting the garden sounds simple — and it is — but it also requires some familiarity with how to harvest each plant. These steps can help you with your harvest:

- When harvesting, clean up the plants in the ground as you go. For instance, remove any dead, damaged, or decomposed parts of the plant to allow for successful regeneration of the plant.

- Root vegetables are probably the easiest to harvest. Look at the bottom of the stem and make sure that a healthy-sized carrot, beet, radish, or turnip has developed, and then pull the entire plant out of the ground. If they are not going to be eaten right away, cut off the greens and place the plant in a refrigerator or root cellar.
- Herbs are also easy to harvest. They all have different harvesting requirements, but in general they are vigorous, can be harvested frequently, and will regenerate quickly.
- Arugula and mesclun mixes of salad greens can be cut to about one inch above the soil and they will regenerate. Farmers refer to these as “cut and come again” crops because they will produce up to three different harvests before becoming less palatable.
- Lettuce is a different story. If you want lettuce to keep producing, harvest leaves starting with the outside leaves. Of course, you can harvest the whole head by cutting the main stem below the point where all the leaves join.
- Other greens such as kale, chard, and collard can also be harvested from the outermost leaves inward. The leaves should be snapped off at the stem and pulled straight downward for a clean cut. The leaves should not be cut or broken, as a short stem that is easy prey for mold and disease will remain. Make sure to leave at least four or five leaves in the middle, for the plant to regenerate.
- Fruit is easy to harvest when ripe. For instance, a ripe apple should come off in your hand with a quarter turn of the stem. A ripe peach should almost fall off in your hand. A ripe raspberry or strawberry is easy to identify as well.

## Chapter 1

# Windowsill Gardens

A windowsill garden is a delightful addition to a classroom, a kitchen, or a balcony. The natural beauty of plants provides a splash of color and stimulation. Plants growing in our homes and classrooms remind us of our inherent connectedness with the Earth as they provide us with clean air to breathe.

Just as a kitchen windowsill overflowing with herbs or flowers inspires us to cook more creatively, a windowsill garden in a classroom evokes curiosity and daily observation. Not only do indoor gardens offer a rich context for learning, they are resourceful options for schools with limited space, extreme seasonal weather conditions, and minimal funding.



## What are Windowsill Gardens?

Windowsill gardens are small container gardens on windowsills or on ledges of buildings. They are usually inside and can range in shape and size. A windowsill or ledge can be effective for starting seeds before transplanting to an outdoor garden. Windowsill gardens can also be used to grow some plants that thrive in small environments with diffused light and slight changes in temperature.

### Advantages

#### Manageable

If you don't have an ideal place for a traditional, in-the-ground garden, if the seasons are too extreme to grow outside year-round, or if you want to start plants from seed and don't have a greenhouse, a windowsill garden could be perfect for you. They take up very little space and can still be quite productive, if plants are chosen and cared for properly. Windowsill gardens grow well year-round as long as they have plenty of light.

#### Great for Cooking

Delicious herbs, edible sprouts, and baby lettuces can thrive indoors.

#### Convenient to Classroom

Windowsill gardens are invaluable instructional tools for hands-on learning about life systems without having to leave the classroom.

#### Brings Outside Indoors

Windowsill gardens can serve as bridges to the outside world, bringing the pleasures of nature inside as a calming focal point.

### Disadvantages

#### Sometimes Difficult to Transplant Outdoors

Plants will often grow "leggy" — or grow too tall too fast — developing weak stems as they reach for light. Consequently, plants that are started in windowsill gardens can be too weak to be transplanted outdoors.

#### Hard to Water Properly

Windowsill gardens are difficult to water properly. Small containers quickly dry out over weekends and holidays, and students tend to enthusiastically overwater small pots in the classroom. Also, if the plants don't get enough direct light and the temperature fluctuates greatly, they will not thrive.

#### Can Easily Outgrow Container

Most large vegetables and flowers, such as squash, beans, corn, tomatoes, and sunflowers, will sprout in a windowsill garden, but will quickly outgrow their containers and need more full-spectrum sunlight.

#### Limited Planting Options

Windowsill containers will likely not be deep enough for taproot or root vegetables, which also don't like to be transplanted.

# Designing the Garden

## 1. Choosing a Location

- Before you settle on a place to establish your windowsill garden, have the kids observe how the sunlight moves through the classroom, keeping a record of their observations for at least a week. They can repeat this each season and notice how the sun's arc changes throughout the year.
- Determine which direction the windowsill is facing. The windowsill garden will need at least 4–6 hours of sunlight on most days. In the Northern Hemisphere, windowsill gardens facing north will generally not get quite enough light to grow healthy plants from seed. However, other shade-tolerant indoor plants will do fine if properly cared for. East-facing and west-facing windowsills are the best bet, as they tend to receive the right amount of direct sun. Windowsills that face directly to the south can flourish, but they must be monitored carefully since the light may be too intense and the soil in the containers may dry out quickly.

## 2. Selecting Materials

- Decide if the plants are intended for eventual transplanting to a larger, outdoor garden or are going to grow to maturity inside, and if you and the kids want to grow flowers, vegetables, herbs, or indoor houseplants. Think about how students will interact with the garden. Will they be moving the garden from the windowsill to the middle of the classroom, where it is accessible and visible to all, or to students' desks? These factors will help you decide what kinds of containers to use.
- If the garden will be moved from one classroom to another, consider using rigid trays and containers to minimize problems in transportation. Also, a cart or table with casters would be useful for moving the garden to different rooms or through the hallways.

- If you plan to use the windowsill garden primarily for germinating seeds, small containers work the best. Six-cell packs from a nursery work well, as do empty egg cartons or eggshells.
- For growing plants such as herbs and lettuces that you will eventually transplant outdoors, use a medium-size container. A 2 x 2 or 3 x 3 inch pot or an equivalent size is ideal. Consider unusual but attractive containers like baskets, coffee mugs, or empty tea tins.
- If you plan to keep the plants indoors throughout their life cycle, choose a larger container that is at least 6 x 6 inches. Reused nursery pots and repurposed flower vases work well in windowsills. A miniature version of an outdoor container or raised bed, with a bottom and drainage tray, will work well, such as a small wooden box.
- Whatever receptacle you choose for your windowsill garden, be sure that water can drain away from the plants. Punch or drill holes in the bottom and place a plate underneath the receptacle or place pebbles in the bottom so water will drain through them and away from the roots. How will water that drains out of the containers be captured and not cause damage to the windowsill, furniture, books, and other surfaces?

## 3. Selecting Soil

- For windowsill gardens, it is easiest to use an organic soil mix from a nursery. When sprouting seeds, use a lightweight seed-starting mix. When filling a container for growing lettuces and/or herbs, a richer potting mix is most suitable.



## 4. Choosing Plants for the Garden

- ☛ If you are planning to use the windowsill for germinating seeds in containers, consider starting with big seeds such as beans, corn, sunflowers, or nasturtiums. Keep in mind that these crops will quickly outgrow their containers and will need to be planted in an outdoor garden within a couple weeks of germinating.
- ☛ If you want to grow seeds to maturity in the windowsill, consider growing herbs (dill, parsley, cilantro/coriander) as well as lettuces and baby greens such as arugula and mâche.

## 5. Maintaining a Windowsill Garden

Maintaining your windowsill garden is like maintaining an outdoor garden under a microscope. The soil moisture should be checked every day. If you are sprouting seeds, you can water a little bit every day to keep it moist. Once the seeds sprout, check the moisture with your finger to see if it is cool and moist below the surface, and then decide if it's time to add more water. Windowsill gardens that receive lots of direct light need more water than those exposed to diffused light.

If you are growing herbs, or lettuces and baby greens, make sure to harvest them when they are ready to eat. (See "Harvesting" sidebar in the Introduction.)

If you are sprouting seeds with the intention of transplanting them to a larger outdoor garden, make sure to wait until the plants have their first set of "true leaves" before disturbing them. Then, place the young starts outside for 4–7 days in their original pots before planting them in the garden. This is called "hardening off" and will allow them to gradually adjust to the outdoor conditions.

Kids also enjoy vermicomposting, so consider setting up a worm bin in the classroom for disposal of organic waste and use it to replenish the nutrients in your windowsill garden. (See "Composting" sidebar in Chapter 3.)

## Checklist of Materials

### Windowsill Gardens

You will need at least one of the following:

- Small container for starting seeds, such as repurposed cups, egg cartons, egg shells, used nursery cell trays, nursery pots, tea tins, or coffee mugs
- A planter box or tray that fits the windowsill space
- Glass or plastic sprouting jar (for growing edible sprouts)

You will also need:

- Low-nutrient potting soil
- Compost to add to the soil each time you plant
- A plate or tray to catch the water that will drain out of the containers
- Water
- Small watering cans
- Seeds



## References

### How to Start a Garden

- *Asphalt to Ecosystems*, by Sharon Danks
- *Garden Up! Smart Vertical Gardening for Small and Large Spaces*, by Susan Morrison and Rebecca Sweet
- *Getting Started: A Guide for Creating School Gardens as Outdoor Classrooms*, by Life Lab and the Center for Ecoliteracy
- *How to Grow a School Garden*, by Arden Buckin-Sporer and Rachel Pringle

### Garden Curriculum

- *Big Ideas: Linking Food, Culture, Health, and the Environment*, by the Center for Ecoliteracy
- *The Book of Gardening Projects for Kids — 101 Ways to Get Kids Dirty, Outside and Having Fun*, by Life Lab
- *Choice, Control, and Change*, by Teachers College Columbia University
- *The Edible Schoolyard Garden Companion*, by The Edible Schoolyard
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### Soil Life

- *Compost Critters*, by Bianca Lavies
- *Teeming with Microbes*, by Jeff Lowenfels and Wayne Lewis
- *Worms Eat Our Garbage!* by Mary Appelhof, Mary Frances Fenton, and Barbara Loss Harris

### Botany

- *Botany for Gardeners*, by Brian Capon
- *Roots Demystified*, by Robert Kourik
- *Seed to Seed*, by Suzanne Ashworth

### Philosophy and Inspiration

- *Gardening at the Dragon's Gate*, by Wendy Johnson
- *The One Straw Revolution*, by Masanobu Fukuoka
- *Smart by Nature: Schooling for Sustainability*, by Michael K. Stone/Center for Ecoliteracy
- *What Matters*, by Wendell Berry

## Credits

### Growing Goodness

At Annie's our mission is to cultivate a healthier and happier world by spreading goodness through nourishing foods, honest words and conduct that is considerate and forever kind to the planet.

### About Annie's

Annie's is a natural and organic food company that offers great-tasting products in large packaged food categories. Annie's products are made without artificial flavors and synthetic colors and preservatives regularly used in many conventional packaged foods. Today, Annie's offers over 125 products which are present in over 25,000 retail locations in the United States and Canada. Founded in 1989, Annie's is committed to operating in a socially responsible and environmentally sustainable manner.

[www.annies.com](http://www.annies.com)

### About the Center for Ecoliteracy

The Center for Ecoliteracy supports and advances education for sustainable living. Best known for its work in school food reform and integrating sustainability into K–12 curricula, the Center has engaged since 1995 with thousands of educators from across the United States and six continents.

The Center's food-related Rethinking School Lunch suite of projects includes an extensive online Rethinking School Lunch Guide, workshops and professional development seminars, and consulting with schools and districts.

Among our other Rethinking School Lunch publications are a cookbook and professional development guide (*Cooking with California Food in K–12 Schools*); a conceptual framework for integrating learning in K–12 classrooms (*Big Ideas: Linking Food, Culture, Health, and the Environment*); discussion guides for films such as *Food, Inc.* and *Nourish: Food + Community*; and essays on the Center for Ecoliteracy website.

The Center authored or co-authored the books *Ecoliterate: How Educators Are Cultivating Emotional, Social, and Ecological Intelligence*; *Smart by Nature: Schooling for Sustainability*; and *Ecological Literacy: Educating Our Children for a Sustainable World*. The Center provides seminars, academic program audits, coaching for teaching and learning, in-depth curriculum development, keynote presentations, technical assistance, and a leadership training academy.

[www.ecoliteracy.org](http://www.ecoliteracy.org)

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