

VERTICAL GARDENS

Gardens can be created in a variety of shapes, sizes, and configurations to fit the space you have available. In this activity, kids will design vertical gardens to explore ways that plants can be grown using non-traditional gardening techniques to take advantage of limited space. They will discover how they can work within their environment to provide everything plants need to grow and thrive.

WHAT YOU'LL NEED:

- ☐ Graph paper and pencils
- ☐ Potting soil, if planting a container
- ☐ A container (optional)
- ☐ A vertical structure such as a wall or trellis
- ☐ Seeds or seedlings for vining vegetables or annual flowers
- ☐ Shovel or trowel, if planting in-ground

TIME: 4-8 weeks

INTRODUCTION:

A vertical garden creatively utilizes vertical space to maximize growing capacity of an area. Adaptable for small spaces, vertical gardens are an appealing option for compact urban sites or homes without a large yard.

In addition to allowing gardeners with limited space to grow a variety of plants, vertical gardening has a number of other benefits:

- Plants grown vertically on an arbor can provide a shady area for relaxation or play.
- They can be used to block an unattractive view or add more privacy to a space.
- Vertical gardens can offer access to gardening for those with limited mobility.
- A vertical vegetable garden can potentially ease food production since properly supported plants are easier to harvest and easier to monitor for pests.
- Disease problems are minimized in vertical gardens due to the improved air circulation.

In some cases a vertical garden consists of plants grown in the ground or large containers placed on the ground and then trained to grow up a trellis or other vertical structure. This approach can be used with plants that are naturally vining, such as peas and pole beans, or other annual and perennial vines. With a little time and effort, plants that are not traditionally grown as vines can also be carefully trained to grow in compact vertical spaces.

Another option for growing vertically involves attaching containers to vertical surfaces such as walls or fences and then planting in those containers. A wide variety of materials can be used as containers, such as traditional pots, gutters, mesh netting, or paperboard cartons. The only requirement is that they must be able to hold enough soil and moisture for the plants to thrive and also offer drainage to keep roots from staying too wet.

In addition to flexibility on construction, vertical gardens can also vary greatly in size, from a container with a trellis on an apartment balcony to a large space such as a green wall on the side of a multistory building. They can also be used in indoor locations as long as adequate light is available. If growing indoors, it is important to carefully consider a catchment system for water runoff.

Follow the Nature Activity instructions on next sheet.



INSTRUCTIONS:

STEP 1

Explore vertical gardens with your kids. Have they seen any vertical gardens in your community? Look for examples in magazines and through online searches.



Vertical carton garden at Southfield School in Shreveport, Louisiana.

STEP 2

Begin with an exploration of your school or home to locate a sunny outdoor area or a well-lit indoor area that you think might be a good site for a vertical garden. This could be part of an existing garden, an open space in a courtyard or entryway, or along a fence or blank space on the exterior wall of a building.

STEP 3

Ask for permission to use the site as needed and then conduct an analysis to guide your design. Make sure to measure the space and make note of the conditions present. Is there soil available or will you need to plant in containers? Is there a structure to provide support as your garden grows or do you need to find one?

STEP 4

Plan your garden. Give kids the chance to think creatively about containers and vertical supports. Here are a few ideas:

- Attach paperboard cartons to a fence using zip ties
- Use an existing fence or arbor
- Attach hanging baskets to stair banisters
- Lean an old metal ladder against a tree or building to use as a trellis (make sure to safely secure it before planting)

- Use an old hanging pocket shoe organizer
- Look for a vintage wrought iron headboard
- Lean wooden pallets against a wall, line with landscape fabric, and fill with soil

STEP 5

Select plants that grow well in your region. The plants best suited for most vertical gardens are vines, which climb by way of their tendrils or by winding their stems around a support. Kids really enjoy quirky flowers and veggies, so look for novelty varieties that can be grown vertically including:

- Scarlet Runner Pole Beans
- Lemon Cucumbers
- Trailing Nasturtiums
- Scented Streamer Sweet Peas (non-edible)
- If growing perennial plants, make sure you have chosen varieties suitable for your zone.

STEP 6

Plant your seeds or seedlings. To encourage vertical growth, most vining plants can be trained to grow up by carefully tying the plant to the structure using twine, plant ties, or fabric strips. Once the tendrils attach onto the structure, many plants will climb their own.

STEP 7

Enjoy watching your garden gain new heights! Make sure to visit your garden regularly for maintenance and enjoyment.

EXTENSION:

Vertical gardens are perfect for hands-on math exploration. Carefully track the growth of your vertical garden. Measure regularly and calculate the growth rate of your plants. Try using different types of measurement systems for comparison.

