



Gardening with Children



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Herbs in Schools Program
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"There should be a garden attached where they (students) may feast their eyes on trees, flowers, and plants...Where they always hope to hear and see something new." Comenius, The Great Didactic 1632

Taking these words to heart,
where shall we start?

WITH A VISION !

WINTER GARDEN VISION

Planning your herb garden.(or school garden)

Is this a new program on TV, a movie, a computer game or some kind of new 3-D glasses? Well, it could be none, some, or all of these things! It is your vision of what your garden was this past year (if you had one) and what it will be next year.

Here's how it works. On a cold winter day, when you can't go outside and don't know what to do, create your own WINTER HERB GARDEN VISION. Here are the materials you will need:

- Your memory and imagination
- Seed or garden catalogs that you can cut up
- Pencils, crayons, markers or paints
- Pictures of your garden

Start by remembering this years' garden if you had one:

- Make a bulletin board that shows your garden and what happened in it.
- Use pictures, drawings, painting and whatever else you can think of.

Create next years' garden:

- Make a plan of your garden for next year.
- Cut and paste, draw, paint, or create it on your computer.
- Then put your creation up on a bulletin board or your wall to remind you of what is to come.

Plan a special event:

- Make plans to have a special event in your garden.
- This could be a Herb Awareness Week Celebration, an Open Garden Day, a Birthday celebration, tea for friends or relatives, or a harvest party.
- Make plans for the event, select the date, make invitations and send them out.

SCHOOL GARDENS

In some schools, gardens are being integrated into the educational curriculum to teach children not only about plants, nature, and the outdoors, but other subjects as well. Gardens can teach children about history, economics, poetry, and math, but are still primarily used for science studies.

There are lots of ideas for school gardens at web sites on the internet! Look at The National Gardening Association site www.Kidsgardening.com, which is full of information for teachers and parents who garden with kids. Check out your local library for ideas in the gardening section and don't forget childrens' books.

What if you do not have a good school yard for a garden?

A garden program does not necessarily have to start out using any outdoor land. Garden programs can be started right in the classroom on a windowsill, a cabinet, or a table near a window or artificial light source.

A growing science center can be established with a small scale garden outside. Or it can be as small as a terrarium in a large glass jar or an old aquarium that can mimic a tropical rain forest or a dish garden planted with cactus to illustrate a desert environment which can be grown in the classroom. The children can design some of the experiments that can go on in their growing center.

If having your own school garden is out of the question, you could still visit someone else's garden, visit city parks or maybe there is a botanical garden or outdoor education center nearby. They may have specific programs that have been developed especially for schools or children. Or visit a virtual telegarden by computer instead.

STARTING A SCHOOL GARDEN

School gardens can provide an environment in which students can learn to work with teachers, parents and neighborhood resident volunteers while growing plants such as herbs and learning the relationship between people, plants (herbs and medicine, culinary uses, companion planting) and wildlife (pollination and pest management.).

The lessons that are taught at the garden site are limited only by the participants' creativity. School Gardens are a special kind of learning center. Like libraries, they need responsible and knowledgeable people to do all the jobs necessary to maintain them as functional places in which children will learn. They should also be seen as permanent additions that will be used year-round.

Below are some ideas to consider before starting your garden.

Step 1--Form a Garden Committee

As a teacher, perhaps you may not have the time that is needed to coordinate the garden program. If this is so then members of the committee can share the responsibility. If establishing a herb garden, your local herb group may be the first ones to ask for help with provision of plants, seeds or cuttings and expertise. Members of the committee may be able to help with overseeing the garden work, finding funds (if needed) to support the

garden, scheduling educational activities, finding and training volunteers, researching and disseminating information. Look for volunteers among the school staff, parents, and local residents. Or if you know of a gardener, ask that person to volunteer, or to recommend another gardener.

Step 2--Define the purpose and objectives of your garden

Every school garden must fulfill some need or objective. This is why each garden is unique. All teachers in the school may utilize the garden as a learning aid. For some teachers it may reinforce natural science classroom studies. For others it may reinforce social studies, provide inspiration for creative writing or become a place for art classes to sketch. Teachers may utilize the garden across all curriculums and may be happy to participate in the planning and give support and provide ideas that will help- make the garden a success.

Step 3--Layout your students gardening activities

By determining your objectives at the planning stage, you will have the opportunity to look at your lesson plans to see when and what types of garden lessons are needed. You will need to determine which groups of students will be doing what and when, and determine how bed space will be allocated. The experiences and input from your garden committee and fellow teachers will be helpful at this stage. This could also be your opportunity to schedule specific activities at specific times or assign certain tasks to volunteers.

Step 4--Define a year-round garden plan

You have identified what your garden will be like while school is in session. But now, you need to think about your garden during school holidays. The main question is, "Who is going to keep this garden maintained until school starts?" "How do you want the garden to look on the first day of school?" A year-round garden use plan will account for any school break.

Step 5--Choose a permanent garden site and design your garden

Your garden site should be in an area that receives plenty of sunlight, has good drainage, and in close proximity to water, electricity and accessible to students, volunteers, and teachers. The site should have enough room for your garden, tool storage, and students. If not in the school grounds, access to a toilet could be a necessity. Maintaining a large garden could use up a lot of your time and energy so be prepared and select a relatively small area for the first year.

Step 6--Build your Garden according to plan

It is a big moment when teachers, volunteers, students and their parents pool their resources and build a garden as a permanent addition to the school. Plan for a celebration at the end of the first workday and again at the completion of the design and planting of the garden. Make sure there are lots of photographs to record progress and encourage students with an interest in filming to be part of the project.

Checklist of School Garden Considerations

Site

amount of sunlight needed
soil characteristics
lot debris
drainage
protection from damaging winds
accessibility-people, water, wildlife
garden materials

Garden design

safety
yearly maintenance
structures for storage, composting,
group gatherings
type of materials needed
cost effectiveness
pathways and garden plot size
convenience for teachers and students
amount of space needed and its use
irrigation-type water system
space for expansion
fencing, water ponds and open space
Annuals, perennial, shrubs and trees

Organizing people

role of students in garden projects
parents, teachers, administrators, and
volunteers
workdays and job distribution
scheduling
communication, information and
education
organizational structure, responsibilities
garden leader and advisory committees

Site preparation

clean lot-remove trash, rocks, etc.
prepare soil
mark pathways and garden plots
construct beds
lay water system
fill pathways
build compost bin
open for planting

selection

Composting

organic matter
maintenance
utilizing compost organisms and
wildlife

Garden Care

watering, weeding, soil improvements
holidays cover crops (green manure)
thinning, staking and protecting plants
plant diseases, insects
mulching ,clean-up
succession planting

Tools, Equipment and Structures

trellis, arbors, fencing, staking
garden tools, tool shed and tillers
buckets, sprayers, water hose
birdhouses, scarecrows

Resources

financial support for construction,
maintenance
seeds and transplants
educational materials
tools and equipment
organic materials, fertilizer, insect
control

Liability

physical hazards for students and visitors
lighting
fencing

Schoolyard Ecosystems and Habitat

flora and fauna
fountains, pools, birdhouses and feeders

Theft and Vandalism

accessibility ,light, fencing

Produce

utilization of produce
source for fund raising
health and nutrition

Use of Fertilizers and Pesticides

safe products
environmental effects
organic methodology

IDEAS FOR GARDEN THEMES

Theme gardens give a guideline for what to plant because it relates directly to an overall theme. These gardens incorporate an interdisciplinary approach to your garden. Your curriculum or class interests can give direction to your theme. An example:

Create Your Own Very Special, Personal Herb Garden

Would you like a garden that is really unique? A garden that will be different from everyone else's? A garden that will fun and interesting? Well, here it is. Create a garden that is named for one of the herbs featured during Herb Awareness Week :

Basil, Lavender, Mint or Parsley.

There are two ways to do this. The first and simplest way is to design your garden so that the plants that are in it spell out the name of the herb, like this:

B A S I L

To make it even more interesting, plant each letter with a plant that starts with that letter. For BASIL that could be: Basil, Artemesia, Sage, Iris, Lavender
It could be planted using several different basils only such as Greek, Globe, Holy, Opal and Sweet Basil. Or the basils could be woven between the other plants, be planted in a regular shaped garden bed, a large pot or individually in differently sized and coloured pots. Use your imagination!

Next make labels to put on or beside the plants. An easy way is to write the names on 3x5 note cards or make them using a computer. Once you have them written, laminate them (cover with plastic or clear contact paper). Then the signs are more likely to last all summer in the rain and sun. Have the wood-working class make some wooden labels to be written on, a ceramics class could design and glaze colourful markers, or carefully selected flat stones or slate could be used.

You can get started on your garden right away. Get some seed catalogs and find the seeds of the plants that you want for your garden or check out your local nursery for them.

Next summer, once your garden is planted and you put the name signs out, you can have even more fun. When someone visits, take them out to see your garden and see if they can figure out what the name of your garden is. I bet they won't know. Then you can explain your special garden to them!

Another Idea: You could do the same thing but feature **your name** instead of a herb. For example if your name is **ERIC** you could use Echinacea (Purple Coneflower), Rue, Iris and Calendula (Pot Marigold)

Some suggestions for other theme gardens are:

Persian Carpet Garden
Friend's Name Garden
Butterfly
Dinosaur Garden
Pond Garden
Rock or Alpine Garden
Alphabet Garden
Imagination Garden
Sunflower House
Sundial Garden
Scented Garden
Fiber Garden

Weaver's Garden
Dye Plant Garden
Medicinal Plant Garden
South Pacific Garden
Peter Rabbit's Garden
Barnyard Garden
Teeny Tiny Garden
Companion garden
Literature Garden
Root Garden
Giant Garden
Pizza Garden

Or be a little different ; How about a CONCEPT GARDEN?

Broad concepts about plants and nature can be studied in a garden with a diversity of plants. The garden easily branches out into scientific and environmental studies theories and principles. For example:

plant life cycles,
plant form and function,
food production in plants (what plant part is eaten),
medicinal use of plants parts
other uses: floral, horticultural, agricultural
regeneration of plants (seeds and cuttings, plant reproduction),
biodiversity (the plant families and classification),
seasonal cycles, or adaptation (large leaves vs. small, smooth vs. hairy)
native plants and their uses

POTPOURRI OF IDEAS for ACTIVITIES in and around SCHOOL GARDENS

Using Your Imagination in your Garden

This garden is especially for kids who have great imaginations! To get started you will need a garden (the school garden), or yard, or field or just a few plants growing somewhere (even your parent's garden will work!).

The first thing you will have to do is to go out and look at the plants. Then let your imagination go wild! Think of all the fun things you could create from the stuff that is in the garden.

Here are just a few ideas:

Put the flowers in ice cubes for your drinks

Cut fruit in half to make stamps

Use flowers and leaves to make a necklace

Make leaf rubbings with crayons and chalk

Make a headband with flowers and leaves

Make something to eat

Use leaves and flowers as special additions to your dinner plate

Make water colors from flowers and fruit (crush the flower or fruit and add a little hot water). Try getting a green paint!

Draw or take pictures of your wonderful creations

Write about what you have done, create a story

Come up with your own wonderful ideas!

Make **garden journals** to keep throughout the year (Use a book making technique and include monthly divisions, lined, plain, and graph paper for pages. Provide time to write, draw, record, and paste up after each garden time.

MAKE A SCARECROW! Hammer two narrow boards in a cross. Ask children to bring child size shirt, pants, shoes, mittens, and accessories. Head can be an old t-shirt stuffed and rubberbanded

Tuck a **bulb** here and there to have some early spring flowers.

Transplant perennials. Children love the soft leaves of lamb's ear.

Work as a community and have children **choose their role** in the garden.

Before planting, have the children figure the area and read seed packets for spacing requirements. Then have them figure how many **plants per area** they should plant. Make seed planting templates out of laminated hardboard with holes cut for seed placement.

Plant garlic cloves (one small section will harvest a whole by the end of school), carrots, radishes, turnips, beets, mustard greens and flower seeds recommended **for fall planting**. Mulch heavy with hay when small plants to withstand cool weather.

Gather seeds from marigolds, cotton, native wildflowers, sunflowers to plant next year, or make a **seed identification** book, or use in a drawing or collage.

Press flowers. Lay a sheet of cardboard on ground. Add two sheets of newspaper. Lay flowers separately and cover with two more sheets of newspaper. Keep adding layers and top off with another sheet of cardboard. Tie up with rubberbands or string and place under something heavy. Try to store pressed flowers in a cool, dry place. Wait ten days then take apart carefully.

Dry flowers head down in 2 parts cornmeal and 1 part borax. These flowers can then be used in wreaths or arrangements.

Use the garden as a **multicultural study** to reflect your class' ethnic backgrounds by studying plant origins and continents, plant migration, and gardening techniques from around the world.

Make a batch of **compost** indoors.

Recipe: 1 part dried leaves, 1 part green lawn clippings, and 1/4 part soil. Line a shoe box with plastic and add mix. Stir regularly and observe.

Better yet... make a **worm bin**. Worms Eat My Garbage by Mary Appelhof.

Still better yet....build a **school community compost area** and start composting the vegetable and fruit scraps from lunches.

Adopt a plant and keep a journal on it (measurements, characteristics, what the class likes about it, drawings..). You may want to work with a sick plant in the school and then revive with worm castings, light and regular watering.

Do **outdoor experiments** found in many teacher resource books. A favourite is to bury a nylon stuffed with natural and plastic materials. Let the children decide what goes in the bag. Dig up again in 3 months. Observe changes..

Make some mud and feel it between your toes. Walk on paper and write out **poem** to learn with the children.

Refrain: Mud is very nice to feel All squishy-squash Between the toes.

First verse: I'd rather walk in wiggly mud. Then smell a yellow rose.

Second verse: I really don't like wiggly mud. I'd rather smell a rose.

Those children singing the first verse can be those who like the feel of the mud, and those children singing the second verse can be those who would rather smell a rose.

Make a **class book** with cut up brown bag grocery sacks

Expand interest in **native plants** by researching their products and planting them in your garden. Specialize in plants used for healing by the Maori.

Make a list of all the things that you have used today except for food that **originated from plants**.(Chairs, soap scents, bicycle tyres etc.)

Visit a supermarket (grocery store) and **identify which plant part** you are eating when you eat for example a potato, rhubarb, cornflakes, lettuce or a radish.

Make a the **weather center** with rain gauge and thermometer. Check the temperature and graph regularly. After a rain check the rain gauge. Observe and discuss changes.

Make a **note card** by folding white construction paper in half. Place dried flowers on front and cover with a sheet of clear contact paper. Write a note to someone special.

Make paper.

Shred used paper and pulp it in a blender with onion skins.

Pour the pulp out over a screen to let the water drain and the pulp form an even layer.

Allow to dry and peel off the screen and use for gift tags or greeting cards.

Experiment by adding plants which are used to produce dyes or add pressed dried flowers and press into the pulp before it dries for a more decorative paper.

Make a **book** out of zip lock bags. Collect treasures outside and write what they are on each page with an indelible marker.

Make a **mural** labeling all the vegetables and where they grow.

Float picked flowers on water. Use as little boats in water way.

Do **weavings** of dried grasses and wool yarn in the bottom of used seed trays from the nurseries.

Make a **wreath** for birds or the front door. Use a grapevine wreath and cool glue gun on dried whole sunflowers, popcorn cobs, pinecones, and a few dried flowers to attract birds.

Pick radishes and carrots planted in the fall. Clean off and **eat like Peter Rabbit**.

Stir compost. It will steam from the heat generated by the decomposition. Monitor and record changes in temperature with a soil thermometer.

Mulch root crops heavily and water before a freeze. Try different materials for mulch, straw, paper, leaves, bark, stones and check water retention, soil temperatures etc.

Plant a **cover crop** of a mix of rye grass, peas,, mustard or lupins on the bare parts of garden for the winter months. The peas form rhizobia on the roots and are very interesting to investigate. They will also attract ladybugs in the spring.

Prepare soil by turning with a shovel for the spring planting. Try double digging and experiment with the addition of compost, organic fertilizers such as blood and bone.

Start a kumera in a plastic peanut butter jar. Change water frequently. Measure the growth of vine with flexible measuring tape. Plant in garden in spring and be prepared to have ten feet of space for it to grow. Dig yams in fall. Bake in oven until oozing with sugar. Cool and cut in circle. Yum.

Start an **avocado pit** or a **Pineapple top**.

Grow some tops from any root crop, carrots work well.

Make a **root view box** by cutting a side of a milk carton. Line with overhead acetate, fill with soil, and plant seeds close to side. Cover with black paper and take off to view.

Keep the **worms happy** with treats like banana peels.

Expandable **peat pellets** are amazing. Use to start seed or propagate begonias, coleus, spider plants...

Germinate something unusual in a zip lock bag. Moisten paper towel with very clean hands and slide into zip lock bag. Add 3 seeds (beans, corn, raw peanut, cotton) Transfer to garden when it warms up outside.

Provide the **birds with nesting materials**. Hang a mesh bag on fence in out of way place and weave in a variety of materials (Hair from brushes, yarn, string, dried grass..). Watch these materials show up in nests.

Make a **bird nesting box**.

Have a **birdhouse** competition. Give it a theme.

Make a hypertufa **birdbath**. Or just use a large ceramic plant saucer on top of an inverted taller pot.

Follow the life cycle of a Red Admiral butterfly by **raising a caterpillar**. Plant some swan plants for the butterfly in the school garden.

Have a **lady bug release** in November. Watch for the larvae and pupa in the garden before the end of school.

Collect **soils** from different spots. Put in clear plastic cups and compare texture, color, and how it absorbs water. Do a pH test and experiment with lime or peat moss to alter the pH.

Plant **lettuce** in any creative container. Looks great and fun to nibble. Have the pottery class make pots that look like **heads and plant grass** in top for green hair.

Pick violets and candy with sugar water. Serve on top of muffins for the mothers on Mothers Day. Have a **tea party** in the garden.

Read Alison's Zinnia by Anita Lobel. It's a wonderful, **alphabet book** of plants from A to Z.

The Carrot Seed is another favorite with young children. Plant some carrot seeds in egg cartons set in plastic gutter on window ledge.

Make **flower prints** with real flowers dipped in tempera then on paper.
*******Find all the wonderful books on gardens in the library.*******

DANCES AND SONGS

Make up **dances and songs** about plants and the weather in the garden.
For example:

Dance on a windy, fall day...

Little leaves fall gently down
Red and yellow and orange
Whirling, whirling, round and round
Quietly without a sound,
Falling softly to the ground.
Down, down, down and down.

How Does Your Garden Grow?

Corn Stalks Grow High, way up in the sky.
(Raise arms above head and sway back and forth)
Watermelons are round,
(Arms in front with fingers interlocking)
And grow on the ground.
(Point to ground)
But under the ground,
(Tap ground with finger)
Where no one can see. Grow potatoes and onions and carrots
(Raise three fingers consecutively)
All three.
(Show three fingers you raised)

Act out "Little Brown Seed"

I'm a little brown seed.
Rolled up in a tiny ball.
I'll wait for the rain and sunshine.
To make me big and tall.

Older children may like to make up a rap/song about worms, slugs, decomposition, and other parts of the garden ecosystem.

For those children who like to build-

Let us Make a Wattle Fence

For centuries the British have made fences, walls, even roofs, of wattle — twisted or woven twigs or branches. Weaving with wood is great fun, and kids can make a short wattle fence to enclose a garden that can last a couple of years.

Here's what you'll need:

vertical posts. These can be made from any sturdy 2- to 3-inch-diameter, 4-foot-long pieces of wood; saplings, branches or bamboo poles will work. You'll need enough to space them about two feet apart.

horizontal weavers. These can be made from any flexible branches, such as willow, or even sunflower stalks. Fresh green wood works best. Cut them as long as possible.

rubber mallet

1. With a hose or rope, mark the fence line. The fence can make graceful curves or form a straight line. Leave at least two feet between the garden bed and the fence to allow weaving room on both sides of the fence.
2. Push the vertical posts one foot into the soil. You may need to pound them with a mallet. Space them about two feet apart, or whatever distance you prefer. They can form a curved line around a garden bed or a straight boundary. Weaving is easier if the posts are neither too far apart nor too close together.
3. Begin weaving the flexible branches horizontally over and under the vertical posts. Start near the bottom of the posts and work upwards, alternating the over/under pattern in each row. Overlap the ends of the branches so there is no gap where one ends and the next one begins. It might help to have one person on either side of the fence to push the branches through to the other side. Place the horizontal rows as close together as you like (or as patience allows).
4. The natural weathering of the wood will make the horizontal weavers brittle after a year or so. They can be replaced without much difficulty, but when the vertical posts wear out, it's time to make a new fence.

If a school garden is not possible consider developing a “growing science” in the classroom.

What is a "growing science" center?

A "growing science" center starts small in the classroom with planting a seed or rooting a plant. Obviously, the plants grow, but more importantly, children's interest in plants, ecosystems and the world grows. And what you have is a science center that gets more focus in the classroom as the children want to investigate and experiment and are motivated to use the science process skills naturally.

The growth of your science center will also branch out and begin to vine into language, math, social studies, art, and music. The learning is hands-on, child-centered and empowers children in a healthy way.

Some of the topics that may sprout from your "growing science" center are soil, weather, plant life, nutrition, chemistry, ecosystems, land uses, environmental issues, insects, micro-organisms, mammals, cultures and more. The children will also have hands-on experience with concepts such as evaporation, propagation, capillary action, synthesis, bio-diversity, and decomposition.

How to create a "growing science" center?

There are ten steps to a successful center:

1. Start small.
2. Let the interest (teacher's and children's) direct the growth.
3. Locate the center near a light source (window ledge, table or cabinet with grow light above, and/or small outdoor garden plot).
4. Make center equipment easily accessible (Newspaper, nursery containers, potting soil, plant journals, graph paper, tweezers, droppers, metric watering containers, measuring tape/string, magnifying glasses).
5. Add a sensory or unusual plant!
6. Sprouting lentils is a great start. Then go from there.
7. Allow freedom for the children to take risks, explore, make choices, be responsible and work together.
8. Keep investigations and projects on-going and overlapping.
9. Integrate in all disciplines.
10. Learn along with the children.

HERBS IN THE CLASSROOM - Herbal Adventures

Herbs...the green flecks in spaghetti sauce, the soothing late night teas, the dried mixtures that keep the bathroom air fresh. But did you know that many prescription medicines contain drugs derived from natural herbs? Or that many perfumes and other fragrances are made from the oils in herbs? Herbs have been used for at least 5,000 years by all cultures for cooking, medicine, crafts, and cosmetics.

Many herbs are easy to raise in the classroom. Herbs have such rich histories and so many uses that they can provide an enticing, multi-sensory theme for learning science concepts and skills, studying other cultures, and tying in subjects across the curriculum.

Activities: What Makes an Herb an Herb?

Commonly, "herb" refers to any plant or plant part valued for its medicinal, savory, or aromatic qualities. In many cases, herbs' oils and compounds that cause healing, good flavors, or aromas, are merely adaptations that help the particular plant survive in its environment.

Humans take advantage of these plant adaptations for our own uses much as we take advantage of flowers (adaptations for pollination) for their beauty.

Consider doing some activities to engage your students in identifying some of the characteristics that make an herb an herb. Some examples follow:

Have students use their senses to compare six potted plants including, for instance, a spider plant, parsley, jade, rosemary, lettuce, and thyme.

Then ask them to organize the plants into groups with similar attributes, and let other classmates guess how the groups were categorized.

Have students taste six edible leaves-spinach, basil, lettuce, rosemary, thyme, and cabbage-and describe the tastes of each.

Ask: Which ones might you eat a bowl of? Why or why not?

How could you imagine using the others?

Invite students to try to match aromas of fresh herbs with dried.

Share with students the fact that herbs contain oils which create the odors and flavors we experience.

After smelling several herbs, have students guess how such odors might help the plants survive in their environment? (Hint: the odors can both attract helpful insects and repel "pests.")

Growing Classroom Herbs

Many herbs can be easily grown in a classroom light garden or windowsill, started from seeds, cuttings, or plants. Local nurseries, friends' gardens, and catalogs are good sources for herb seeds and plants.

Plant herb seeds in the same soilless potting mix you use for other indoor plants, or plant them in a mixture of 1/3 sand, 1/3 peat moss, and 1/3 soil.

Most herb seeds are small, and should be planted no more than 1/4" deep in moist soil or sprinkled on the top of soil and covered lightly with potting mix.

You can have children mix tiny seeds with a small amount of sand to make them easier to sprinkle over the soil. Mist the soil, and cover containers with plastic to keep seeds moist until they germinate.

To give herb plants room to grow to maturity, thin seedlings to one per 4" container or 2 plants per 6" container from cuttings.

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Some herbs are quicker and easier to start from cuttings than from seeds.

To take cuttings, snip healthy stems 3-4 inches from the growing tip.

Remove leaves from the lower half of the cutting, and plant the cutting in a soilless mix. Water gently and cover the container with a plastic bag until new top growth appears. from plants

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Many herbs can be purchased from nurseries as young plants, or dug, particularly in the spring, from the new shoots emerging from mature plants outdoors.

Mothers' Day Herb Books

Each student can adopt-an-herb to raise in their GrowLab.

Students read seed package directions to discover how to plant and care for their herbs, make ongoing observations, and drawings, and research history, folklore, medicinal, and culinary uses.

The students can find recipes with their particular herbs and create a book which includes drawings, observations, research reports, and a variety of recipes for his or her herb. The books and plants could make informative, aromatic Mothers' Day gifts.

Herbs Across the Curriculum

There are endless opportunities to tie language arts, math, social studies, science skills, art, and more in with an herb unit. Reflect on some of the varied uses, past and present, for herbs and consider how you might incorporate them into engaging cross-disciplinary activities. Some examples follow:

Explore the use of herbs in different cultures and cook an international meal.

Create a class cookbook of your favorite herb recipes.

Cook two batches of spaghetti sauce, one with and one without herbs. Compare the tastes.

Make aromatic herbal "sachets" or catnip toys from dried herbs in fabric pouches.

Research and practice some herbal dyeing in your classroom. Indoor garden herbs that are good for dyeing include: catnip, marigolds, marjoram, morning glories, parsley, rosemary,sage, and zinnias.

Devise ways to capture and retain the smell of one of your fresh herbs.

Investigate whether cats really go wild over catnip. Grow some of this mint, then design a fair test to see if cats prefer it to other members of the mint family like peppermint, spearmint, and basil.

Design a "smell test" using aromatic herbs to compare the abilities of different people to discriminate among them.

Find out about the culinary, cosmetic, and craft uses of herbs by people in a time period or culture you're studying. For example: Early settlers, Maori Native Plant Use, Ancient Greece, the Middle Ages, the Victorian Era, etc.

Herbs have been used for thousands of years to perfume our bodies and homes. They are used to cleanse, protect, and invigorate our skin and hair. Have students try some of the following:

Survey soaps, shampoo, cosmetics, lotions in stores or in the house to identify herbal ingredients.

Make scented oils by soaking fresh blossoms or leaves of herbs such as mints, lavender, or rose in vegetable oil. Remove the herbs after 24 hours and replace with fresh herbs. Continue this each day for a week. You'll have a lightly scented oil for skin and bath.

Write to or visit a company that makes natural cosmetics to find out more about what herbs are being used today. In the late 1800s, chemists began isolating the chemicals in plants used for thousands of years by people to promote healing. Although many of these active chemicals are now created synthetically, new substances are constantly being found in plants and herbal remedies still used in some cultures. They're also being discovered in places such as diverse tropical rainforests.

Create your own herbal recipes to cure common maladies, e.g., writers' cramp from too much homework.

If the opportunity arises, devise a "fair test" to compare the effects of the juices of the aloe plant on burns to those of a commercially-made lotion.

Interview a pharmacist to find out which medicines used today are made from plants.

Indoor Herb Growing Chart

Herb	days to germination	how to start it
Aloe		plants
Basil	5-10	seeds or plants
Caraway	14+	seeds
Catnip	4	seeds or plants
Chives	7	seeds or divide plants
Chamomile	7	seeds or plants
Coriander	9	seeds
Cress	7	seeds
Dill	5	seeds
Fennel	6	seeds
Garlic		plant cloves as bulbs
Lavender		plants
Lemon Balm	7	seeds or plants
Nasturtium	5	seed
Oregano	30+	cuttings, plants, seeds
Parsley	20+	seeds or plants (soak 12 hrs. before planting)
Peppermint/Spearmint		plants or runners
Rosemary	20+	seeds or plants
Rue	7	seeds or plants
Sage	28+	seeds or plants Summer
Savory	5	seeds
Tarragon		cuttings or plants
Thyme	20+	plants or seeds

To encourage bushier, fuller plants, pinch off new growth for smelling, tasting, or using in experiments.

Growing Classroom Herbs

Many herb plants can be easily grown in a classroom light garden or windowsill, started from seeds, cuttings, or plants. Local nurseries, friends' gardens, and catalogs are good sources of seeds and plants.

Here are a few tips to get you started.

From seeds. Plant herb seeds in the same soil-less mix you use for other indoor plants, or in a mixture of 1/3 sand, 1/3 peat moss, and 1/3 soil. Most herb seeds are small and should be planted no more than 1/4 inch deep in moist mix, or sprinkled on the top and covered lightly with mix.

Young children can mix tiny seeds with a bit of sand to make them easier to sow. Mist the soil and cover the containers with wax paper or plastic wrap to keep seeds moist until they germinate.

To give most herb plants room to grow to maturity, thin or transplant the seedlings to one per 4-inch container.

From plants or cuttings. You can purchase many herbs from nurseries as young plants, or dig them in the spring from new shoots emerging from mature plants outdoors. Some herbs are quicker to start from cuttings than from seeds.

To do this, snip healthy stems 3 to 4 inches from the growing tip. Remove leaves from the lower half of the cutting, and plant the cutting in a soil-less mix. Water gently and cover the container with a plastic bag until new top growth appears.

ACTIVITIES with HERBS grown in the CLASSROOM

What better motivator for student investigations than plants that feel cool, smell great, and can turn mere tomatoes into pizza sauce?

Consider ways in which you can use herbs in the classroom to get students observing, comparing, and designing investigations. Here are a few suggestions to prompt your thinking.

Note: It's important to check for allergies before inviting students to rub, taste, or otherwise touch herbs.

Also remind students that although the herbs used in the classroom may be safe, they should not experiment with plants they find elsewhere until checking with a knowledgeable person.

Early in a unit, have the class generate a list of all of the ways they can think of that we use herbs. Revisit and revise the list as research and investigations generate new information.

Or have students create concept maps with "herbs" at the center, and then create new concept maps at the end of a unit.

Encourage students to use their senses to explore a variety of herb plants, noting similarities and differences, then recording what they know, observe, and wonder about the plants. Guide them in setting up investigations or research projects to help answer their questions.

Provide or have students bring in a variety of dried herbs and spices. Challenge them to carefully observe the contents, and try to infer what part of the plant each ingredient comes from.

Alternatively, bring in a dried herbs and spices and the corresponding plants and seeds. Have students try to match the plants with their dried forms and seeds.

Have students explore and compare a mixture of herb and nonherb potted plants. Ask them to organize the plants into groups with similar attributes, then let other classmates guess how the groups were categorized.

Discuss what attributes seem to distinguish herbs from other plants, and invite students to imagine and brainstorm why these plants may have evolved with such strong aromas and flavors.

Provide a variety of herb plants, then challenge students to figure out the "best" way to extract the smell/flavor from a plant. You might want to provide a variety of materials to give students ideas for "extracting," such as a toaster oven, hot plate, boiling water, frying pan, crushing and cutting utensils, and so on.

Challenge students to experiment to test "the best" herb or combinations for particular purposes: for instance, the best spaghetti sauce herb, best salad dressing combo, or the best herb for fragrant bath oil. Require students to back up their choices with data rather than just stating their own opinions.

Using a school garden, botanic garden, or other herb garden, develop a scavenger hunt that focuses students' attention on qualities of herbs. Here are some sample clues: find an herb that smells like a mint, might taste good in spaghetti, or might repel fleas.

Invite students to become herbal sleuths, looking for evidence of herbs in grocery stores, household products, pharmacies, and so on.

Consider experimenting with your own herbal creations. (One first grade class made calendula (pot marigolds) oil to use on chapped hands. They grew calendulas indoors, then picked the flowers and left them submerged in olive oil on a windowsill. After six weeks, they shook, strained, and bottled the mixture.

Herbs and History

Kids naturally love fragrant plants, so exploring herbs is great fun for even preschoolers. These aromatic plants played even more vital roles in earlier times than they do today, and kids will get a kick out of learning about their usefulness.

In many cultures, herbs and spices were considered more valuable than gold, and people took risky journeys to find and trade them. After all, it was the desire to find shorter routes for trading valuable spices that motivated New World explorers like Columbus to journey from home. What made early peoples revere these strong-smelling plants?

Imagine how people coped hundreds or thousands of years ago without drugstores, grocery stores, sanitary facilities, cosmetic stores, or adequate clean bathing water. What might they have done when they had a headache, for instance? Through trial and error, people discovered that certain plants could be used to treat illness and injury. There was no refrigeration to prolong food storage, so the aromatic qualities of herbs helped disguise the odors and tastes of spoiling food.

The fragrances of many of these plants were also used to keep homes and bodies smelling fresh in the form of potpourri, perfumes, and lotions. During the medieval period, freshly cut herbs were actually strewn on floors to scent air and repel pests.

While you might not want to encourage your children to do like their ancestors did and sprinkle herbs on the floor, there are many ways kids can have fun with herbs.

Here are some suggestions:

1. Visit gardens and garden centers so kids can see, smell, and touch a variety of herbs. Then they can include their favorites in their own gardens.
2. Mint tea is popular with children, and they can make it easily by picking several leaves, crushing them to release the essential oils, and steeping them in hot water for several minutes. Peppermint and spearmint are good choices.
3. Tiny herb flowers, such as violas, can be frozen in ice cube trays to cool down a glass of iced tea or lemonade. These are as fun to make as they are to use.
4. If your children are fond of the fragrance of roses, they will enjoy splashing on rose water after a bath, or even adding it to bath water. To make it, add fresh or dried rose petals to a stainless steel or enamel pan, barely cover them with distilled water, and simmer for 20 minutes. Then strain the scented water and bottle it.
5. Make fragrant sachets, small cloth bags filled with herbs and other flowers that you can put in a drawer next to your clothes or hang in a closet to help make your clothes smell good. You can make bags with drawstrings so you can empty and refill when the fragrance is gone, or you your sachet. For a strong, spicy fragrance, mix together dried leaves of basil, sage, lemon verbena, and thyme.
Floral scents can be made by mixing together flower petals from carnations, gardenias, geraniums, lavender, jasmine, roses, orange blossoms, and sweet peas.
6. Calendula flowers contain healing properties that make them helpful in treating mild skin abrasions, sunburn, and chapped hands, among other conditions. Kids can make healing calendula oil by picking fully opened flowers during the heat of the day (when they contain the most resin).Submerge the flowers in olive oil for 4 to 6 weeks, then strain and bottle the oil.

FAQs about Herbs, children and gardening.

Question: What are some interesting things my kids and I can do with the herbs we harvest?

Answer: Herbs have an almost endless variety of tasty and creative uses. Start by picking a bouquet of fresh parsley, basil, mint, or dill to decorate the kitchen or the dining table. Use sprigs or leaves to garnish your food, then use the herbs for flavoring. Parsley is tasty in salads, pasta, soups and stews; basil is wonderful with fresh tomatoes, added to spaghetti sauce, or sprinkled over pizza; mint is great with iced tea, lemonade, fruit salad, melon, and chocolate ice cream.

Tepid mint tea with a bit of honey mixed in appeals to young gardeners. Dill is a traditional addition to boiled potatoes and potato salad, but it also adds zest to cucumbers, "dilly" green beans, and even plain sweet potatoes. It's fun to experiment to see how herbs enhance flavors of different foods.

Be sure to save some of the kitchen herbs to use next winter. Basil, oregano, thyme, rosemary, and sage all dry quite well. Your kids can help bundle them and wrap them with rubber bands to hang in a dark airy place. When they're dry, you and your kids can package them into jars and label them.

Consider drying some of your herbs for decorative uses. Dried aromatic swags, arrangements, or wreaths can be as simple or as elaborate as you like. Have fun adding a few dried flowers, a bit of ribbon for extra color, or other bits of decoration, such as small toys, that appeal to your children.

Don't worry about any leftover or broken bits; these can be added to potpourris and sachets. These simple projects can bring back summer memories and make great gifts.

Question: I would like my elementary-school-aged children to grow some of their own plants in my garden this year. Can you suggest some flowers, herbs, and vegetables that are especially enjoyable for youngsters to grow?

Answer: Children seem to enjoy sweet cherry tomatoes; pumpkins; snow peas; pizza herbs, such as basil and oregano; cilantro (if they like salsa); and chives because the flowers are edible. Flowers might include impatiens for their explosive seed pods, tiny violas purchased in bloom, sunflowers, tithonia, and zinnias for picking. Hens-and-chicks are also always popular with children.

Question: How can I make student learning meaningful in the garden?

Answer: The key for students to gain meaningful learning using a school garden lies in their own participation and personal investment in the garden experience.

Through active involvement in all aspects of garden design, implementation, and experimentation, children feel ownership and pride, and thus willingness to learn, in the garden.

Environmental education research tells us that a school gardening experience is especially educational and satisfying if in-class discussion and decision making, and exposure to the academic expectations of the garden, take place before students set foot in the garden.

Let's take, for example, a class that is studying Pioneer New Zealand. The class goal is to grow an herb garden that would exist during pioneer times. In preparation for planning the garden, the students might do the following: Research Pioneer gardens and the plants that the early settlers grew;

Discuss why the settlers brought plants with them to the New Zealand, and which plants they brought;

Explore New Zealand pioneer garden design;

Find out how herbs were used during pioneer times;

Discover what makes an herb an herb

Let each student "adopt an herb," write a report on it, and grow it from seed for the garden;

Research current recipes containing these herbs and make a cookbook;

Design and measure the school garden in preparation for their designs.

The list could go on, but the point is that the students know more about herbs used by their great grandparents and the Moaris in New Zealand before they put their first plant into the garden.

When the day comes for planting the school garden, the students are invested in the garden concept, and inspired to move forward. (If you glance over the list again, you will see that students would have addressed learning standards in math, history, language arts, and science.)

Planning an Alphabet Garden

Question: We want to grow an alphabet garden, but we're worried about finding the right plants for each letter, especially X and Q. Can you help us?

Answer: Alphabet gardens are always fun to make. Older children will be able to tour a nursery or browse through the plant catalog and come up with lots of suggestions for plants to include. To avoid overwhelming a younger child, offer just a few plants to choose from at a time.

You will be able to find most letters by using bulbs, annuals, perennials, herbs, and shrubs. Be sure to consider the Latin name as well as the familiar common names in your search, and be flexible. For example, your child might decide that queen Anne's lace could be used for Q, A, or L.

If a suitable plant is unavailable or impractical, improvise. Children are very good at this. For instance, your child might decide to include a letter by making a sign with the letter on it, or might include an interesting object that begins with that letter, or even skip it altogether. The skipped letter can be presented as a quiz: "Can you find the missing letter?"

The letter Q is sometimes a tough one, so let your child help you decide what to do. One possible solution would be to place a question (for Q) mark next to a "mystery plant" or next to a spot where you keep a list of all the plants in your alphabet garden so that you can answer questions about it.

The letter X is also tough, but the challenge can be resolved in many fun ways. Try using a pair of crossed sticks (an X) to mark the exit, mark the spot where something special such as "buried treasure" is hidden, or simply to identify the best spot to sit and view the garden. Or consider planting the lovely dried flower immortelle. Its Latin name is xeranthemum.

Herb or Spice?

Question: What is the difference between an herb and a spice?

Answer: When botanists use the term herbaceous, they mean a plant that is soft stemmed, with little woody tissue. But in culinary and other ethnobotanical uses, herbs are usually defined as plants of temperate climates whose leaves are harvested for use. It can get confusing: Although most are nonwoody, some woody plants like rosemary, whose leaves we use, are herbs in a culinary sense.

Invite students to rub the leaves of aromatic herbs to break microscopic oil glands and release their fragrance. Then ask students to imagine why these plants might have evolved with these distinct aromas and flavors. (Botanists believe that they are largely a defense against being eaten by herbivores.) Ask students to brainstorm common herbs in which we eat both the leaves and the seeds (e.g., dill).

Spices, on the other hand, are mainly tropical plants in which we typically use the roots (ginger), fruits (vanilla pods), flowers (cloves), seeds (pepper), or bark (cinnamon).

Consider having students identify the tropics of Cancer and Capricorn, which roughly separate tropical and temperate zones, and compare climate factors in both zones. Invite them to brainstorm which popular flavoring is neither an herb nor a spice. (Salt is a mineral not derived from a plant!)

Engaging Activities

Question: What are some rewarding garden-related activities or projects that can engage my kids, so they don't spend all their time weeding?

Answer: Watering is always fun, especially if a little bit lands on the kids, too. You might set a timer so that they can play with the water (without wasting too much after they have watered the garden.)

Giving tours is great for building self-confidence and presentation skills, and it's a welcome opportunity to show off the results of all that hard work.

Remember to harvest, package and label seeds if you plan to save your own. Specially folded and decorated envelopes of home-saved seed can make lovely gifts.

Write a poem or a story or a song about the garden.

Sitting under a tree making decorative labels, signs, and scarecrows along with other ornaments such as sundials, stepping stones, and bird-feeders can fill many pleasant hours.

Experiment with some simple new vegetarian recipes to take advantage of the wonderful vegetables you have grown. Try some edible flowers, too.

Some children delight in making a photographic or video record of the garden's progress, while others might prefer a scrapbook or written journal.

Pressed flowers, dried flowers and potpourri, dried herbs, and dried produce can all be fun projects. Try making paper using flower petals for color, too.

Lazy summer days are a great time to learn to identify insects, especially butterflies. Stock up on a few well-illustrated reference books, a screened bug cage, and a hand lens; see how many you can find in your garden.

Bird watching is another pastime to enjoy in the garden. You'll need sharp eyes, a guidebook, and possibly binoculars and an audio-tape of birdcalls.

Invite some friends over for a garden tea or old-fashioned picnic on a blanket. Maybe the guests would like to pick their own bouquet to take home along with a few extra vegetables.

Question: Which homemade insect sprays are okay for kids to make and use?

Answer: Healthy gardens are abuzz with insect activity day and night. Most of these insects are beneficial to our environment. But even the most well-cared-for gardens are sometimes invaded by pests.

Child-safe insecticides include: soap solutions, herbal sprays, and purees of garlic, onion, or peppers.

Here's how to make your own herbal insect repellent:

Gather leaves from tansy, lavender, and sage (these have the most insect repelling qualities). Altogether you'll need 1 ounce of leaves from each plant. Place the herbs in a 1-quart jar and fill the jar with boiling water. Let it set until it cools.

Or make an infusion by steeping the herbs in a jar of water placed in a sunny outdoor spot. Drain off the liquid and the solution aside. Dissolve 1 teaspoon soap flakes in 2 cups of water. Add 1/8 cup of the herb solution and mix well. Use a sprayer to coat all plant parts with the bug-repellent spray.

Homemade soap sprays are effective against soft-bodied insects such as aphids. Dissolve 3 tablespoons of soap flakes (not detergent) in a gallon of water and spray on plants.

Another easy-to-make repellent combines **hot peppers and garlic** in a soapy solution.

Puree two hot peppers and two cloves of garlic in a blender.

Add 3 cups water and 2 tablespoons biodegradable liquid soap.

Strain and fill a spray bottle with the solution and apply to plants.

Kids seem to really like making bug solutions, so here's a project for the older set:

When insects infest flowers or vegetables, identify and gather the pests.

Collect at least 1/2 cup of critters.

Place the insects in an old blender with enough water to make a thick solution.

Blend on high and strain out the pulp using cheesecloth or a fine sieve.

Dilute at a rate of 1/4 cup bug juice to one cup of water, pour into a spray bottle and apply to plants.

Always test these solutions on a few small leaves before starting a full-scale application. Be sure to label containers clearly, keep them tightly sealed, and store in a safe place.

If mixing and storing your own concoctions doesn't appeal to your children, try sprinkling hot pepper powder around seedlings when setting them out.

Wood ashes make a valuable soil amendment because of their potash content, but they can also be used as a repellent against several pests. Sprinkle ashes around plants to discourage slugs and beetles.

Question & Answer cont

Calming Bee Fears

Question: How can I help my child be less fearful of bees in the garden?

Answer: If the child is terrified because of an allergy, there may not be much you can do except try to remain calm yourself. Make sure the child carries his or her allergy medicine at all times and be as careful as you reasonably can. Be aware that any flowering plant may attract bees, but remember, too, that the bees much prefer flowers to people! Screaming or jerking away from a bee may startle it into stinging, so try to move slowly and quietly when you do see one. A simple saying has helped many a child move calmly and safely away from a bee. It goes like this: Say "Hi, Bee," take a breath and back away a little slowly and quietly; Say "Goodbye, Bee," take another breath and back away a little more; Say "Fly away, Bee," take another breath and ... by then you'll be fine.

More ideas and a WARNING !!!

Gardeners love to share their interest in gardening, and sharing with their children can be particularly rewarding. Even 2- and 3-year-olds can help plant their own little patch, and watch as life unfolds around them. Here are some suggestions for making gardening enjoyable--**and safe**--for young children.

Section off a corner of the garden or yard where a child can do as he or she pleases. Provide high-quality small-scale tools such as trowel, cultivator, rake, and hoe.

Begin by setting aside a section of garden that belongs to the child. It doesn't have to be designed or even particularly attractive, just a place where to explore without risk of damaging your prized plants.

Let the children choose what they'd like to grow. Most often, these will be plants they recognize, such as pumpkins and potatoes. Plants with large seeds, such as beans, sunflowers, and nasturtiums, are easiest for small hands to sow. Though radish seeds are small, children delight in the almost instant growth and harvest. Or plant with a theme, perhaps a "pizza" garden containing tomatoes and peppers as well as herbs such as basil and oregano.

Children love hiding places. Consider constructing a tepee from tall poles and twine, to be covered with climbing beans and flowers. (Be sure to leave an opening for a door.) Or create a special room: a circle of tall sunflowers with shorter sunflowers or other flowers between them.

Many culinary herbs are attractive and have interesting scents. Chives, sage, mint, and basil are good choices for a child's garden. Edible flowers, such as nasturtiums, pansies, violets, and calendulas, are also good.

Avoid medicinal herbs like St. Johnswort (*Hypericum*) and valerian (*V. officinalis*), because they can be toxic if ingested in large quantities.

Since many other plants--even something as familiar as rhubarb leaves--are toxic, teach your child to consult with you before anything into his or her mouth. Only a few are so toxic they should not be used around children and pets.

Two extremely toxic plants are castor bean (*Ricinus communis*) and precatory bean or rosary pea (*Abrus*). Many other plants are toxic in larger quantities and should be avoided in a child's garden. These include angel's trumpet (*Brugmansia*), delphinium, foxglove (*Digitalis*), euonymus, morning glory (*Ipomoea*), lantana, cardinal flower (*Lobelia cardinalis*), sweet alyssum (*Lobularia maritima*), and love-in-a-mist (*Nigella damascena*).

Poinsettias are not toxic. A study at Ohio State University established that a 50 pound child would need to consume 50 leaves to experience an upset stomach.

Tips

Make gardening fun, not work. Offer encouragement and how-to, but go easy on detailed advice. If a child sees you at work in the garden, he or she will want to imitate what you do--the best way to learn.

E-Mail Pals

School Garden E-mail Pals: Seeking Stories

School Garden Registry has grown to over 1500 participants, many of whom find e-mail pals for collaborating on projects, swapping data, or sharing lesson plans, photos, seeds - you name it! We'd like to feature your experiences as e-mail pals on Kidsgardening.com in the coming months. Please send your stories to barbarar@garden.org.

Please add your outdoor classroom to the School Garden Registry

Search here for e-mail pals.

Web site: <http://www.kidsgardening.com>