

Growing, Eating, Living

A Garden Guide for Head Start



Head Start Garden Program, a project of the
California Head Start Association
caheadstart.org

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WELCOME FROM THE CALIFORNIA HEAD START ASSOCIATION

On behalf of the California Head Start Association (CHSA) Board of Directors, I am pleased to present *Growing, Eating, Living: A Garden Guide for Head Start*.

This guide is a product of our inaugural Head Start Garden Committee. The mission of the committee is *to give children and families a gardening experience to promote awareness about how food is grown and to encourage healthful eating and active living*. The many wonderful individuals (listed at the end of this guide) are pleased to share their passion for gardening. In the tradition of Head Start, this guide serves as both a resource and as an invitation to staff, parents, and community members. We welcome your duplication and hope that you share this with others introducing gardening to young children. Also, we welcome your contributions of content, photos, recipes, and more. It is our expectation that this guide will be the first edition of many.

In addition to this guide, CHSA is launching a statewide Garden Project in partnership with Western Growers Charitable Foundation and with support from Lakeshore Learning Materials. Inspired by California's first lady, Maria Shriver, CHSA has joined with the California School Garden Network to share the joy and promote the message of nutrition, parent involvement, and active living through Head Start site gardens. Each Head Start site will receive a grant, resource, this guide, and much more during our inaugural year.

We look forward to hearing about your success, as we are committed to growing a healthy community for every child.

Best regards,

Edward Condon,
Executive Director

GETTING STARTED

This resource guide is meant to give a simple and easy approach to gardening with preschool-age children. Any beginning gardener who follows the directions can harvest a successful garden. While there are many types of gardening, this guide will be directed toward container gardening, such as garden beds, wine barrels, and planter boxes. For other gardening methods, please refer to your local master gardener or the master gardening website. The guide is meant to assist a broad range of people; hence, we encourage you to use it to fit your needs. You should skip ahead when your level of knowledge exceeds the material presented.



Helpful Tips

- ✧ Throughout our guide you will find Helpful Tips to assist you in the development of your Head Start Garden.

School gardens can provide an environment in which students can learn to work with teachers, parents, and community members while growing plants and learning the science, math, nature, and art of gardens. The lessons that are taught at the garden site are limited only by one's creativity. School gardens need responsible and knowledgeable people to do the many jobs necessary to maintain them as functional places in which children will learn. They should be seen as permanent additions and must be utilized year-round. Below is a framework that you should consider before starting your garden.

Step 1 – Form a “local” garden committee.

A garden committee can help coordinate the garden program. The garden committee can help organize who is to be responsible for the garden work, finding funds to support the garden, scheduling educational activities, finding and training volunteers, researching, and disseminating information. Identify gardening experts who will be invaluable with the planning and implementation of the garden. Look for volunteers among the school staff, parents, and community members. 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 Head Start garden must fulfill some need or objective. This is why each garden is unique. All teachers utilize the garden as a learning aid. For some teachers, it may reinforce natural science classroom studies. For others, it may reinforce social studies. Some teachers may utilize the garden across all curriculums. Whatever your needs are, by addressing these issues, you will have a better understanding of the work involved in this stage.

Step 3 – Lay out your students’ gardening activities.

By determining your objectives at this early stage, you will have the opportunity to look at your lesson plans to see when and what types of garden lessons are needed. If you need help finding educational exercises and activities, there are many resources available for teachers. You will need to determine which groups of students will be doing what and when, and how bed space will be allocated. The experiences and input from your garden committee will be helpful at this stage. This is your opportunity to schedule specific activities at specific times or assign certain tasks to your 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 summer break. 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 plan will account for any school break.

HEAD START STANDARDS AND OUTCOMES

A school garden is an important nutrition education tool. There are many ways teachers can present nutrition education, but gardening provides a fun, interactive way to teach and learn.

The following performance standards apply to a Head Start garden.

1304.21 (c) (1) (iii) – Integrate all educational aspects of the health, nutrition, and mental health services into program activities.

1304.23 (b) (1) – Design and implement a nutritional program that meets the nutritional needs and feeding requirements of each child, including those with special dietary needs and children with disabilities. Also, the nutrition program must serve a variety of foods which consider cultural and ethnic preferences and which broaden the child’s food experience.

1304.23 (b) (2) – Provide appropriate snacks and meals to each child during group socialization activities.

1304.23 (b) (4) – Parents and appropriate community agencies must be involved in planning, implementing, and evaluating the agencies’ nutritional services.

1304.23 (c) (1) – A variety of food is served which broadens each child’s food experiences.

1304.23 (c) (7) – As developmentally appropriate, opportunity is provided for the involvement of children in food-related activities.

Benefits of using gardens to teach nutrition:

- ✧ Gardens provide a site for hands-on learning and to practice using the scientific method.
- ✧ Children are excited about eating fruits and vegetables that they grew themselves.
- ✧ Students will obtain a greater appreciation for how their food is grown.
- ✧ Gardens are used to teach food safety through proper harvest, processing, and storage.
- ✧ Children have the opportunity to practice preparing nutritious foods and to try new foods to expand their diets.
- ✧ Gardening is a skill that promotes better health and wellness, and children can use this for the rest of their lives.
- ✧ Nutrition education through school gardens increases children's knowledge about fruits and vegetables, which will improve their attitudes towards these foods and lead to better eating habits.
- ✧ Gardens teach children a greater appreciation for food processes by observing growth from seed to harvest.

CHOOSING A GARDEN SITE FOR SUCCESS

The first step to planning your garden is choosing an ideal location. To do this, you will need to do a site analysis to identify the best location that will adequately fulfill your needs. To examine the usefulness of the area, look for potential environmental factors that may prevent your garden from flourishing.

You should do a site analysis even if you only have one option available to you because it will help you determine what you can successfully grow.



Sun

Choose a spot that gets plenty of direct sunlight throughout the day. If planting in winter, remember to factor in shade. Most flower and vegetable gardens need to be exposed to sunlight for five to eight hours per day. Leafy vegetables need at least five hours of sunlight, and fruiting vegetables need at least eight.



Helpful Tip

- ✧ Before deciding on a spot, check the site at different times of the day to ensure there is adequate sunlight.



Water Source

Access to water is essential for the sustainability of your garden. The site should have a water source nearby with a faucet or a hose attachment. If there is not a water source nearby, a watering can may be necessary. When choosing your watering cans, be sure to factor in their weight when full and the number of trips you'll have to make back and forth to the faucet.



Soil

Using the right kind of soil is critical to the success of your garden. Check with your local nursery to ensure that you get good garden mix soil.

How to mix the perfect soil for the perfect garden:

- ✧ One bale of peat moss
- ✧ One large bag of coarse vermiculite
- ✧ Twenty-five gallons of sand
- ✧ One quart of lime
- ✧ One quart of organic fertilizer



Helpful Tips

- ✧ Avoid walking on the soil because every step compacts it.
- ✧ Don't work with wet soil because it will become clumpy.



Accessibility

You'll want to choose a spot that is easily accessible to the children. To increase involvement, you should select a site that is visible to the children to enjoy throughout the day. A garden that is located close to the classroom will make it easier to incorporate daily garden activities into the curriculum on a daily basis. You should also consider the amount of space that is available for group gatherings, such as harvest festivals.



Helpful Tips

- ✧ Don't grow by a building that casts a shadow.
- ✧ Don't grow in an area that accumulates puddles when it rains.
- ✧ Don't grow near a big tree; its roots will steal nutrients and water from your garden plants.

DESIGNING YOUR GARDEN

Once you have chosen the right location, you are ready to start designing your garden. The first thing you'll want to do is decide what kind of garden you want. There are many ideas for garden themes that can be incorporated into curriculum and classroom activities. Some suggestions for garden themes are:

- ✧ **Alphabet Garden** – Plant a garden of fruits and vegetables that begin with every letter of the alphabet.
- ✧ **Pizza Garden** - Grow a pizza garden filled with your favorite toppings, such as tomatoes, sweet peppers, onions, jalapeños, basil, oregano, thyme, and parsley.
- ✧ **Companion Garden** - Position plants together that are known to have a beneficial effect on neighboring plants by discouraging pests and diseases or improving growth.
- ✧ **Native American Garden** - Plants such as squash, potatoes, pumpkins, gourds, and corn can be used to show the traditional diet of Native Americans.

After you have selected a theme, it is time to draw up a plan for your garden. Invite the children to participate by asking them to draw their own diagram of what they think the garden should look like. Encourage them to draw a picture by pretending they are looking at the garden from a bird's eye view. Mark on your diagram where all the trees and large shrubs are located. Be sure to keep your garden as far away from them as possible because they create shade and will steal nutrients from your garden. The placement of vegetables should run north to south to ensure they get the best sun exposure. The tallest vegetables, such as corn, vine tomatoes, and peas, should go in the back. The shorter vegetables, such as carrots, salad vegetables, and onions, should go in the front so they will not be shaded. Identify the placement of the vegetables with labels. Make sure to include a path so the children have plenty of room to walk when they are working in and exploring the garden.

GROWING IN RAISED BEDS

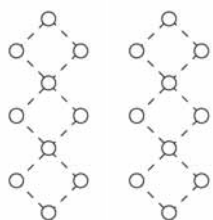
Provided by North Bay Children's Center (see our online resource for examples http://caheadstart.org/CHSA%20_GEL_GARDEN_GUIDE_06.pdf)



Raised beds are the best growing medium for vegetables in small- to medium-sized gardens. They can be intensively gardened. Traditional row farming is for tractors and for people growing large single crops.

General Benefits of Raised Beds

- ✧ Beds do not become waterlogged.
- ✧ Beds warm up more quickly in spring.
- ✧ Beds are less likely to be walked on.
- ✧ Beds allow for conservation of water and fertilizer.
- ✧ One can grow so much more in a limited space.



Spacing for Vegetables

When planting a raised bed, use a diamond pattern when bedding in the plants. Experience is best for knowing how to space. General spacing guidelines are as followed:

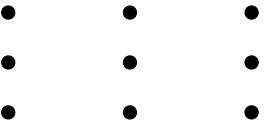
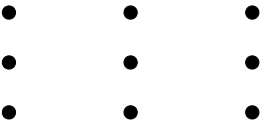
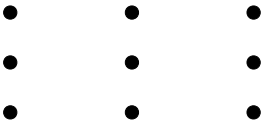
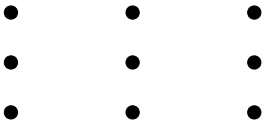




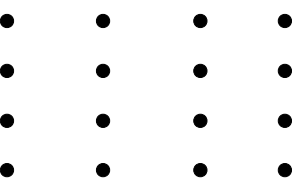
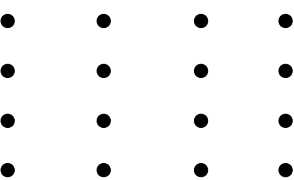
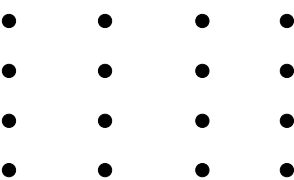
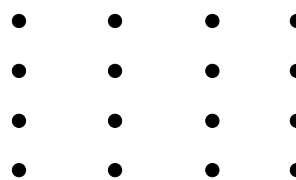
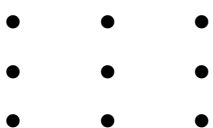
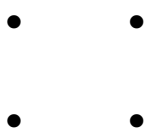
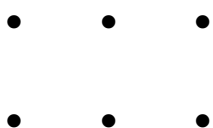
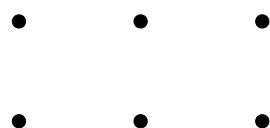
Fall/Early Spring & Spring/Summer 4' x 4' Raised Garden Planting Plans

Provided by North Bay Children's Center

Fall/Early Spring Planting Guide

Actual plantings will, of course, vary between climate zones. The most important things to know are the projected "dates" of the first and last frost in your area. In fall, plant about 10 weeks before the first frost. In spring, plant seeds/seedlings about 4 weeks before the projected last frost date. Divide the bed into 16 square-foot areas for planting.

North Side

TRELLIS UP		TRELLIS UP	
Sugar Snap Peas  10 Weeks to Harvest	Sugar Snap Peas  Plant 9 Peas per Sq. Ft.	Sugar Snap Peas  Plant Pole Peas	Sugar Snap Peas  Tie Peas to Trellis
Broccoli  10 Weeks to Harvest	Cauliflower  One Plant per Sq. Ft.	Cabbage  May Plant 2, Then Thin	Kale  Plant 2 Kale
Carrots  Scatter Seeds, Then Thin	Beets  8 Weeks / Eat Greens, Too	Carrots  Kids Love Carrots	Radishes  Replant Every 3 Weeks
Spinach  7 Weeks to Harvest	Swiss Chard  Fast Grower	Lettuce  Grow Leaf Varieties	Bok Choy  Eat Young When Tender

South Side





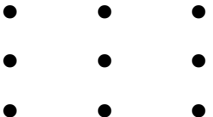
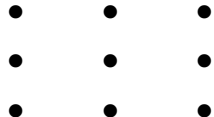
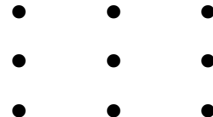
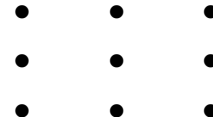
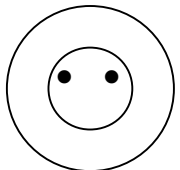
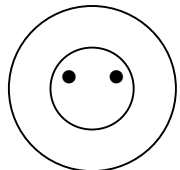
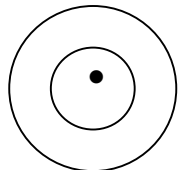
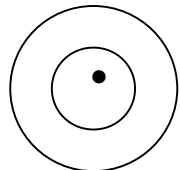


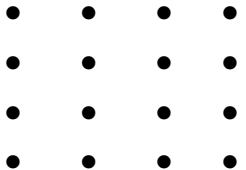

Growing Notes:

Build a trellis for the pole sugar snap peas so they can climb. To be “safe,” you may want to plant two of the broccoli, cauliflower, and cabbage seedlings just to make sure you get one good one—you will need to thin down to one plant as it grows. With carrots, scatter the seeds in the square, then thin—eat the little ones as you do! This is a good garden to sow at the beginning of the school year in September, then replant in February or March, depending on where you live. Harvest everything prior to Earth Day to make way for summer garden delights.

Spring/Summer Planting Guide

Once again, actual planting dates will vary, but Earth Day is a good day to start planting your summer garden. This garden is sown after all fear of frost is gone.

North Side

<p>Corn</p>  <p>Plant 2 Seeds</p>	<p>Corn</p>  <p>White Corn Is a Favorite</p>	<p>Corn</p>  <p>Try Aztec Corn</p>	<p>Corn</p>  <p>Tall Varieties Are Best</p>
TRELLIS UP		TRELLIS UP	
<p>Green Beans</p>  <p>10 Weeks to Harvest</p>	<p>Green Beans</p>  <p>Plant Pole Beans</p>	<p>Green Beans</p>  <p>Try Green Snap Beans</p>	<p>Green Beans</p>  <p>Tie Beans to Trellis</p>
<p>Cucumbers</p>  <p>Plant Using Cone Hoops</p>	<p>Cucumbers</p>  <p>Lemon & Sour Gherkin Kids' Favorites</p>	<p>Tomato</p>  <p>Plant Indeterminately</p>	<p>Tomato</p>  <p>Kids Love Cherry Tomatoes</p>
<p>Sweet Pepper</p>  <p>10 Weeks to Harvest</p>	<p>Sweet Pepper</p>  <p>Yolo Wonders: Good Variety, Many Colors</p>	<p>Cilantro</p> 	<p>Basil</p>  <p>Pick Leaves Often</p>

South Side

Growing Notes:

The corn should shoot ahead, and the beans will follow up the trellis and then climb the corn, too. Use the wire “cone hoops” normally used only for tomatoes and cucumbers. Try lemon and sour gherkin cucumber varieties—both are tasty and easy for kids to eat off the vine. Plant pole snap green beans (Kentucky wonder is a good variety). **It is most important to plant “indeterminate tomatoes”—these are the compact type that do not go everywhere!** Do not be timid about pruning runners—if not tended, this selection of plants could quickly become a jungle! Planting two corn plants in each “square” may be one too many. As your plants grow, use your best judgment if it is getting too crowded or too wild. It is better to have one good plant rather than two scrawny ones that produce poor fruit.



Helpful Tips

- ✧ When planting in a raised bed, be sure not to step on the bed.
- ✧ If plants (like peas and beans) need to be staked up, it is best to place the trellis before planting.

WHAT AND WHEN TO PLANT

Provided by North Bay Children's Center



Helpful Tip

- ✧ For the purpose of following the Vegetable Planting Guide, and as a teaching tool, you should acquire an inexpensive thermometer.

Annual* Vegetable Planting Guide for Children's Nutrition

(*Annual vegetables require “annual” seeding, as opposed to perennial plants that grow for many years).

Vegetable	Planting Season	Direct or Transplant	Soil Temp.	Position	Germinate/ Harvest (days)	Comment
Snap Green Bean Easy for kids to eat right off the vine	Warm / Hot	Direct sow 4" apart	60° plus	Sunny, compost only (no need for extra N fertilizer)	Germinate 6-14 / Harvest bush 45-65 & pole 60-70	Pole beans allow for better use of space and are easy to grow

Sugar Snap Peas Easy for kids to eat right off the vine	Cool / Warm	Direct sow 4" apart	40°-60°	Cool in partial shade; good fall/spring crop	Germinate 6-15 / Harvest 55-90	Sugar snap peas are wonderful—eat them pod and all. Provide stakes to grow upward.
Sweet Corn Kids love growing and eating corn.	Warm / Hot	Direct sow 12" apart	60° plus	Full sun; needs rich, drained soil with extra N	Germinate 6-10 / Harvest 70-100	So many varieties—sweet white to Aztec purple. It's a heavy feeder.
Cherry Tomatoes "Kid-size tomatoes"	Warm / Hot	Transplant 18"-24" apart	70° plus	Full sun; water the roots	Germinate 6-14 / Harvest 80-120	Cherry tomatoes are child-size and easy to eat; many varieties; stake up.
Cucumbers Everybody loves cucumbers!	Warm / Hot	Sow / transplant 12"-18" apart	70° plus	Partial shade; keep free of weeds	Germinate 6-10 / Harvest 48-80	Many varieties/ provide vertical growing frames and water
Broccoli Kids like eating it fresh.	Cool	Transplant 12"-18" apart	50°-80°	Full sun	Germinate 10-12 / Harvest 97-145	Sprouting variety is best for kids.
Carrots This is their favorite!	Cool	Direct sow; thin to 2" apart	45° plus	Partial shade; sandy, loamy soil	Germinate 15-20 / Harvest 70-80	Kids can't get enough, so plant thickly!
Radishes Quick results make for an easy supper.	Cool / Warm	Direct sow; thin to 2" apart	50°-85°	Partial shade	Germinate 3-10 / Harvest 25-30	Fast grower—put in refrigerator for a day to cool hot taste.
Squash It's easy to grow a lot of it.	Hot	Sow / transplant 36" apart	40°	Full sun; grows fast, so needs lots of water	Germinate 6-10 / Harvest 40-100	Plant in "hills" of 3-4 plants with space.

Notes to Remember When Working with Children's Gardens

It all starts with good soil. Hopefully your soil will already be rich, dark, and filled with worms. If that is not the case, however, your best bet is to add abundant amounts of well-rotted compost. You can also add peat moss, a little lime to sweeten it up, sand/loam to help loosen the soil, and a collection of organic fertilizers like blood meal, bone meal, and fish emulsions. Carefully observe your plants—they will tell you what they need! Seaweed is a good multi-mineral fertilizer. Just like humans, plants need trace minerals to thrive. If your soil is healthy, your plants will thrive.

Melons Not easy to grow	Hot	Sow / transplant 36" apart	70°	Sunny	Germinate 8-12 / Harvest 90-110	Needs compost and lots of water
Beets Great for salads and pickling	Cool / Warm	Direct sow; thin to 2"-4" apart	40° plus	Partial shade	Germinate 7-10 / Harvest 60	Versatile vegetable— raw, pickled, or cooked
Lima Beans Winter cover crop; not always good to eat	Cool	Direct sow; thin to 3"-6" apart	55°	Full sun	Germinate 7-21 / Harvest bush 65-80 & pole 85-90	Good as a winter cover crop, as are fava beans; mixed taste
Swiss Chard It's everywhere! Easy to grow	Cool / Warm	Direct sow 4"-8" apart	35° plus	Partial shade	Germinate 12-18 / Harvest 55-65	Easiest to grow; great crop year- round
Sweet Peppers Eat right off the bush, or BBQ.	Hot	Transplant 12"-18" apart	75°	Full sun	Germinate 10-20 / Harvest 102-146	Many varieties; good for salsa and salad
Cabbage Winter staple	Cool	Transplant 12"-18" apart	50°-80°	Full sun	Germinate 10-12 / Harvest 102-166	Good fall and/or winter crop; tolerates frost
Cauliflower Winter staple	Cool	Transplant 12"-18" apart	50°-80°	Partial shade	Germinate 10-12 / Harvest 90-134	Better in cool weather

Kale Too often overlooked; great source of vitamins	Cool / Warm	Transplant 12"-18" apart	50°	Full sun	Germinate 10-12 / Harvest 90-140	Many varieties, all rich in goodness; good for soups
Spinach Seed out in fall and early spring.	Cool	Direct sow; thin to 3" apart	40°-80°	Partial shade	Germinate 6-14 / Harvest 40-65	Best in cool conditions—good spring, fall, and winter crop
Lettuce Many varieties for a host of tastes	Cool / Warm	Sow / transplant 4"-6" apart	40°-80°	Partial shade	Germinate 4-10 / Harvest 45-60	Many varieties; plant continually except in hot summer
Onions / Garlic Good companion plant	Cool / Warm	Transplant bulb	35° plus	Sun or shade	Germinate 6-10 / Harvest 90-120	Can plant in early fall for spring crop
Potatoes Fun to grow	Warm / Hot	Plant seed eyes	45° plus	Full sun	Germinate 7-14 / Harvest 90-120	Many varieties; mound up constantly
Pumpkin Plant in rich compost.	Warm / Hot	Sow / transplant	65° plus	Full sun	Germinate 7-12 / Harvest 110	Needs fertile ground and lots of space to grow
Eggplant Beautiful fruit	Warm / Hot	Transplant	70°	Full sun	Germinate 6-10 / Harvest 50-80	Susceptible to frost damage
Chayote Lots of fruit	Warm / Hot	Direct sow whole plant	65°	Partial shade	Germinate 10-18 / Harvest 90	Tricky to grow; susceptible to frost
Arugula Great for pesto and salads	Cool / Warm	Direct sow	50°	Partial shade	Germinate 7-14 / Harvest 42	Sow in spring/early fall; excellent to grow in wine barrels



Helpful Tips

Basic Guide for Growing Vegetables in Children's Nutrition Gardens

BEST CROPS TO GROW

The best crops to grow are the ones the children can eat fresh, straight from the vine, like sugar snap peas, snap green beans, and cherry tomatoes.

EASIEST TO GROW

The easiest crops for children to grow are radishes because they mature in less than three weeks. Swiss chard practically grows itself. Beans are also easy because they are fun to germinate in the classroom.

FAVORITE CROPS

Kids love carrots, so if you grow them, make sure the children do not harvest them too early! Carrots grow best in light, well-drained soils. The other vegetable kids seem to really like to grow is pumpkin. Pumpkins grow best when there is an abundance of well-rotted compost and a steady supply of water.

GO VERTICAL

With limited space, go vertical. Pole beans, sugar snap peas, cucumbers, tomatoes, and chayote can all be trained to climb up a trellis. The bigger and taller, the better—imagine playing in a bean tent!

Do not be afraid to try anything! Cast seeds onto fertile soil, give them access to the sun's warmth, and water regularly, and they will grow! Keep it fun. Keep it magical. Be creative. Most of all, just keep doing it. With time and experience, it's easy to grow vegetables that are fresh, crisp, and delicious.

SAFETY AND TOXIC PLANTS

Make sure to start with a safety lesson before children are allowed to wander around the garden. It is really important that children are instructed properly.

- ✧ Do not leave sharp, dangerous tools lying around. Keep them away and out of the children's sight.
- ✧ Only allow the children to handle kid-sized tools.
- ✧ Keep an eye open for plant allergies that may show up.
- ✧ Make sure the children dress appropriately. Some tasks may require jeans and gloves.
- ✧ Have the children scrub their hands and nails after they have touched the soil.

Poison Control 1-800-222-1222

Consult the Poison Control Center
if you think a child has eaten any part of a poisonous plant.

How to Avoid Plant Poisoning:

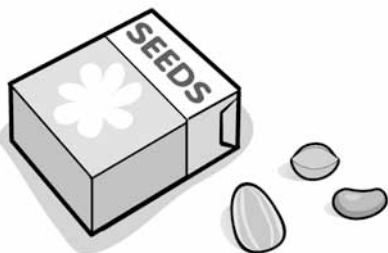
- ✧ Teach the children never to eat leaves, stems, bark, seeds, mushrooms, nuts, or berries they find outside or in the garden unless an adult has told them the plant, or part of the plant, is safe. Make sure they are aware of the potential dangers. An example is the tomato plant. The ripe fruit is safe and delicious, but the green parts (stems and leaves) are toxic.
- ✧ Call the California Poison Control System at (800) 222-1222 if there is a concern.
- ✧ Keep plants that you know to be dangerous out of the garden.
- ✧ Store bulbs and seeds out of sight and out of the reach of children.
- ✧ Learn (or have available) the botanical names of the plants you are growing in the garden. Many plants have the same common name, so confusion may result.
- ✧ If you take a child to the doctor or hospital for treatment for potential poisoning, bring the plant that was ingested for identification.

A list of toxic plants is available through the following website:
<http://plantanswers.tamu.edu/publications/poison/poison.html>

PLANTING SEEDLINGS

Provided by North Bay Children's Center

Seeding



Most seed packets have all the information you need to know about when, where, and how to plant particular vegetable seeds. Before planting, read the plant labels carefully to make sure you are planting in the correct location and during the right time of the year. Choose a day to sow your seeds when the soil is dry so that the process will be easier. Once you have a rake, a watering can, and some seeds, you are ready to start sowing. First you'll want to rake the soil until it is flat. Then turn the rake upside down

and rake the soil again, bringing a small pile to one side of your plot. Sprinkle small seeds into the soil, spreading them evenly. Plant larger seeds one by one evenly, with the right distance between them. Once you have planted the seeds, take the soil that you raked to the side of the plot and cover the seeds. Then gently water the soil well with a watering can. Make sure to water the seeds every day until the seedlings are 5 cm (2") tall. Thin out the seedlings so that they have sufficient room to grow and become healthy.

Teaching the children how to transplant their seedlings teaches them to respect their plants and helps them understand what plants need to grow.

General Guides for Transplanting Seedlings

- ✧ Transplant in the cool of the day.
- ✧ Always bed the plants in with water.
- ✧ Try not to hold the plant by the stem.
- ✧ Practice good spacing.
- ✧ Protect the new seedling from pests and birds.
- ✧ Mulch the seedling after planting.

Newspaper Pots: Best Way for Kids to Transplant Seedlings

Provided by North Bay Children's Center

If the children have used the “newspaper pots” to grow their seeds, then transplanting is an easy job. Dig a hole, gently place the whole plant—newspaper and all—in the hole, water thoroughly, and then put a little compost in with each plant. The children will need to be guided on how much space each plant needs to grow. By encouraging them to use compost when transplanting, you will show the children that plants need food, too! Also, have the children mulch the plants with straw, thus giving the young plants protection from the sun and wind. If needed, apply bird netting or a floating bed cover to protect the new plants from insects and birds. In raised beds, use a diamond pattern to lay out and space plants.



Materials

- ✧ Garden trowel
- ✧ Watering can
- ✧ Bucket of compost
- ✧ Straw for mulching
- ✧ Measuring stick
- ✧ Pest protection

Instructions

- ✧ Help the children use the measuring stick to set out the distances between the plants.
- ✧ Children can then dig the holes.
- ✧ Place the plant inside, being careful not to damage the stem or roots.
- ✧ Feed the plant with compost.
- ✧ Water the plant thoroughly.
- ✧ Cover the ground around the plant with mulch without smothering the plant. The stem area must be open and able to breathe!
- ✧ After the bed is finished, protect it from birds and/or insects.

Growing Seeds in a Newspaper Pot

Provided by North Bay Children's Center

For the pre-k age group, growing seeds in a "Do-It-Yourself" newspaper pot makes good sense for a number of reasons:



1. The pots are easy to make.
2. The pots are free and reuse/recycle paper.
3. When the seedling is ready to be transplanted, plant the whole thing—paper and all. There is no need to disturb the roots or stem of the plant.

How to Make a Newspaper Seedling Pot

Materials

- ✧ Cylindrical container that is 2.5" high and 2.5" in diameter to be used as the mold (vitamin bottle or 4-oz. cup works fine)
- ✧ Tape
- ✧ Newspaper
- ✧ Seed tray with bottom lined with newspaper
- ✧ Serving spoon
- ✧ Potting mixture

Instructions

- ✧ Take a quarter sheet of newspaper or a one-half sheet of tabloid-size newsprint. Neatly fold it four times lengthwise.
- ✧ Roll it around the cylindrical container and tape the ends together.
- ✧ Fold in the excess paper around the container bottom. Press the bottom of the container against a flat surface.
- ✧ Remove the container from the newspaper. Work the bottom edges of the newspaper with your fingers to flatten, and place it in a seedling tray (the bottom of the tray should be lined with newspaper to stop soil from dropping out).
- ✧ Use a big serving spoon to fill the newspaper seedling pot with potting mixture. Now it's time to plant the seeds!

BEST WAY FOR KIDS TO CARE FOR AND WATER PLANTS



Feeding

Plants require a number of nutrients besides soil, air, and water. The most common are nitrogen, phosphorus, and potassium (corresponding to NPK listings by weight percentages on fertilizer packages). Nitrogen helps with green leaf growth and the filling out of fruit. Phosphorus helps root growth and fruit and seed production. Potassium helps with stem strength and root growth. You'll need to fertilize your plants to make sure your garden maintains nourishment. You should follow the law of return: What you take from the soil you have to give back. You can do that by mixing compost with the soil between seasonal planting. If you don't have access to compost, then you can use Miracle-Gro. For a broader spectrum of fertilizers, consult your local nursery or local master gardener.



Helpful Tip

- ✧ A fertilizer that can be made for classroom garden use is a manure tea. Soak a quart of manure (fresh or dried) in a gallon of water for a week or two. Stir daily.



Watering

Vegetables thrive with water, so make sure that you are regularly checking to see if the plants are wilting or if the ground is dry. Some plants do not need to be watered every day. Before you water, do the "poke test" by sticking a finger a few inches into the ground. If the soil is dry, then water the plants; if it is moist, then leave them alone. It is best to water early in the morning or late in the afternoon when the temperature is cooler. If you water during midday when it is warm, the water will evaporate. Direct the water towards the base of the plant, not toward the fragile leaves or stems. Do not water frequently for brief periods of time; instead, deep-soak to encourage roots to grow down in the soil. Be sure not to water too much because most plants will die if they sit in soggy soil.



Helpful Tips

General Guides for Watering

- ✧ Water in the morning if possible.
- ✧ Gentle watering is best.
- ✧ Water the roots rather than the leaves.
- ✧ Watering is a good time to inspect the plant's health.

Teaching the children how to water their plants is central to the whole process of growing fresh foods. Plants are like people—they like warm water, not cold. Cold water causes plants to go into a slight shock. Also, we all know giving a child a watering hose at school is just asking for trouble! So the plan is to have the children use small watering cans or plastic margarine cups to draw water from buckets that have been filled with water. Then the child waters one plant at a time in his or her garden area. It's a controlled process that will take a bit of time. It will teach the child that each plant is important and needs to be cared for. As they water it regularly, they will see how it grows and matures. It is also a wonderful time for the child to observe the plant's condition. "Did you see any bugs?" "Does the plant look healthy?" "Did it need the water?" "Was the soil under the plant damp?"



Materials

- ✧ Plastic buckets filled with water placed around the garden area
- ✧ Small containers the children can use to water the plants

Instructions

- ✧ Place buckets filled with water around the garden.
- ✧ Children use small containers and/or watering cans to draw water from the buckets, and then, one by one, water the roots of the plants.

Word of caution: Supervisors need to be aware of the potential dangers of water play. The buckets should be light plastic so that they tip over and empty if a child falls in. With toddlers, this exercise must be closely supervised.



Helpful Tip

- ✧ The easiest way to prevent weeds in the first place is to cover the ground with mulch.



Weeding

Weeding is a necessity in order to maintain healthy and thriving plants. Before you pull weeds, make sure that they are not coming from the plants surrounding them. Once you have identified the weeds, pull them by hand or use a stirrup hoe. When you are done, you can discard them in the compost bin.



Plant Rotation

Rotating your crops every season decreases the likelihood that crop-specific pests will invade your garden. Crop rotation also helps prevent the nutrients in the soil from depleting, inhibits plant diseases from flourishing, and helps keep weeds under control. When planning to rotate the crops every season, same family plants should be grouped together because they are prone to attract the same pests and diseases.



Mulching

Putting mulch around the base of plants will help conserve moisture and keep weeds away. It is also useful for new and fragile plants during the winter months. Some common materials to use as mulch are wood chips, hay, sawdust and straw. Spread a 2"-3" layer of mulch around seedlings and on beds. You may have to repeat this process several times during the growing season as the mulch decomposes into the ground.

Label Your Plants

Labeling the vegetables as you are planting will remind the children what is growing in the garden and where. The children can get acquainted with the vegetables that will be cultivated in the garden by participating in making the labels.



Helpful Tips

What You Will Need:

- ✧ Plastic cut into rectangles
- ✧ Pictures of vegetables from magazines or seed packets
- ✧ Safety scissors
- ✧ Popsicle sticks
- ✧ Craft glue

What to Do:

1. Cut out pictures of vegetables you are planting.
2. Glue the pictures onto the plastic rectangles.
3. Put glue on the top end of each Popsicle stick.
4. Press the sticks onto the backs of the plastic rectangles. Allow to dry, then place each stick in front of the row of vegetables it represents.



Composting

Composting is the decomposition of plant remains, grass clippings, fallen fruit, kitchen organic leftovers, and other once-living materials to make rich, dark, crumbly, and healthy soil.

Composting is a great way to recycle yard and kitchen waste for use as a resource for your garden. The microorganisms that recycle leaves and other plant parts need an even mix of green and brown ingredients. They also need air and water to aid in the process of decomposition.

What to Compost

Grass/lawn clippings, which are high in nitrogen, are a green compost ingredient. Be sure to add grass clippings in very thin layers so that they don't become slimy and matted down. Leaves are also an excellent compost ingredient. Make sure to break up any clumps and spread them in thin layers. Many types of weeds and old garden plants can be converted into compost, although you should avoid weeds that have begun to go to seed as they may begin to resprout in the compost pile. Kitchen waste, such as fruit and vegetable peels/rinds, tea bags, coffee grounds, eggshells, and similar organic waste, are good materials to compost. These items tend to be high in nitrogen and moist, so they need to be mixed in with drier/bulkier materials to allow complete air penetration. Wood chips and sawdust are in the brown category because they are low in nitrogen. Sawdust should be used in thin layers or stirred thoroughly into the pile. Coarse wood chips may have better use as mulch because they tend to decay very slowly. Anything that used to be alive can decompose in a compost pile, so you can use old gym socks or napkins, although most people choose to compost things that decompose rapidly.



Tips on What NOT to Compost

- ✧ Avoid composting meat scraps, fatty food wastes, milk products, and bones because these items attract pests. Do not compost chemically treated wood because you will risk adding toxic chemicals to your pile.

How to Start a Compost Bin

A bin helps keep the pile orderly and makes it heat up and decompose more rapidly. Bins can be constructed with wire, cinder blocks, and pallets or wood. A food waste composter is easily made from a trash can (with holes). Other types of bins include worm bins (for vermiculture) and some commercial types, such as those that rotate. A system of three or more bins may help in the turning of the materials on a regular basis.

Keeping Pests Away

In general, it is best to use organic methods to control pests. These include such methods as handpicking, setting up traps (such as rolled-up newspapers to collect earwigs), and using strong water sprays (helpful in brushing off aphids). It is also important to let the children learn about beneficial insects such as ladybugs. There are several recipes for nontoxic sprays (e.g., soap and water) that can be found on the internet. For further information about pest control, consult your local University of California Cooperative Extension, Master Gardeners. Master gardeners can also direct you to the UC Davis Integrated Pest Management (IPM) program.

PARENT INVOLVEMENT

Head Start is unique because the program recognizes that the parent is the first and primary teacher of the child. Head Start's success comes only with the support and involvement of Head Start parents, families, and community partners.

Parent involvement and participation, therefore, is essential to ensure the Head Start Garden Project is thriving and successful. Engagement of parents in the planning and implementing of this project provides opportunities for parents to better understand the importance of nutrition in the healthy development of their children. It also assures compliance with Head Start Performance Standards and creates a school-home connection. Groups that exist within the agencies, such as Male Involvement, should use their abilities, skills, and time to support the project.

The Garden Project provides opportunities for parents to:

- ✧ Recognize their creative interests and skills.
- ✧ Share knowledge, experience, time, and energy for a common purpose.
- ✧ Create relationships to build a community for the children to learn and develop to their full potential.

Use these steps to get Head Start parents engaged in the garden project:

1. Introduce the idea of a garden project to the Site/Center Parent Committee at the monthly meeting.

- ✧ State the advantages for the children and the resources available.
- ✧ Give parents the opportunity to participate in the planning phase of the project. Let them discuss a plan to support and assist with the project. Make them feel an ownership of this project.
- ✧ Tell them what other resources are needed to make the project succeed, such as experience with planting, carpentry, plumbing, etc.
- ✧ Do an informal survey of parents to find self-disclosed assets of the group, such as experience with planting and an interest in or knowledge of growing different plants, and various other skills, such as organization, communication, attention to detail, and physical abilities.
- ✧ Let the parents determine how to work out division of time and labor to support children and staff with the plan and design of a garden, continuous care and maintenance, monitoring, and the use of the fruits and vegetables harvested.

2. Present to the Policy Council the plan for the garden project so they will provide support at their site.

3. If possible, make the Policy Council monthly meeting a forum to report on the status of the project at sites that have implemented a garden.

4. The Policy Council should support this project by recognizing centers and providing incentives, such as an award of recognition to centers, their representatives, and the Parent Committee members.

PARENT EDUCATION

The Garden Project is a great setting to launch parent training and workshops on nutrition, consumer education, and parenting, and to attain increased parent participation.

To accomplish this:

- ✧ Develop a core group of parents to assist with the garden and report monthly on the progress.
- ✧ Expand this group of parents to have regular get-togethers for families to learn more about different fruits and vegetables, including their cost and instructions for preparation.
- ✧ Have families from different backgrounds share their cultural customs, history, and cooking practices.
- ✧ Arrange for families to contribute recipes and do cooking demonstrations to share with the group.

When it is time to harvest, have a garden celebration with planned activities so that parents, children, and staff can enjoy the fruits of their labor.



NUTRITION

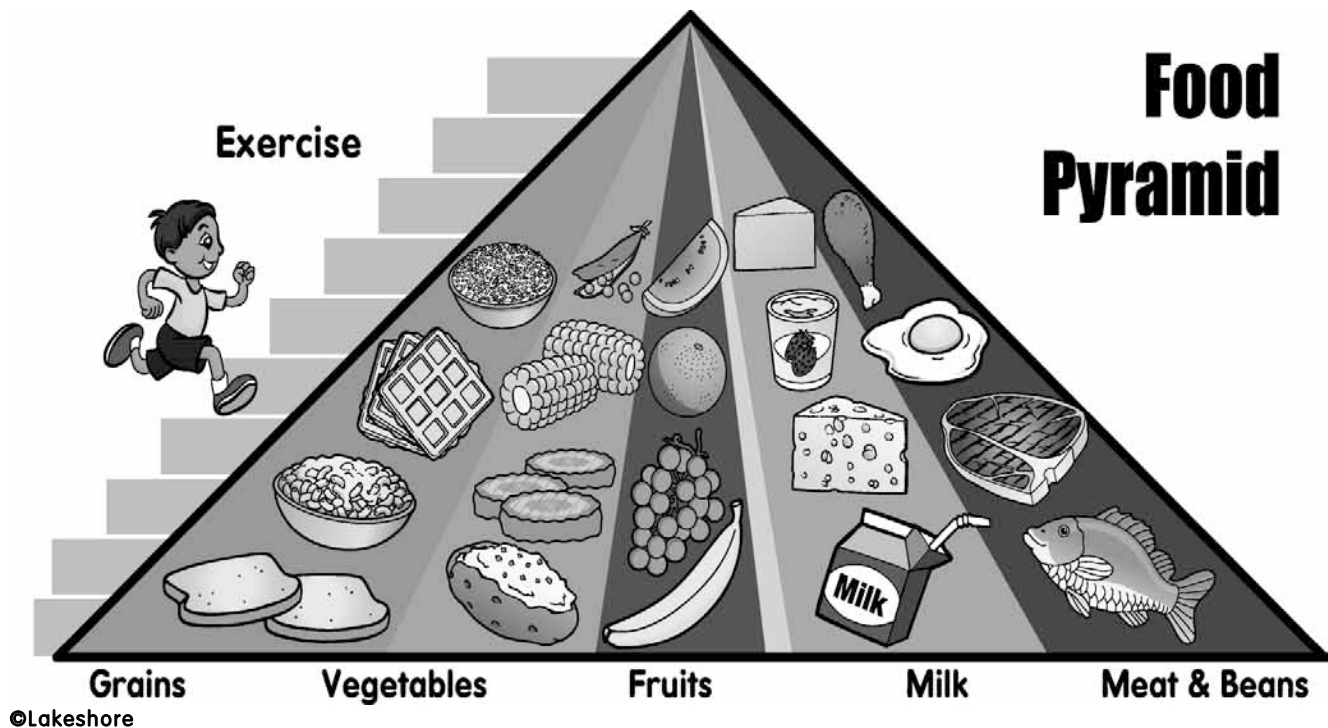
Eating plenty of fruits and vegetables is an integral part of maintaining a healthy diet. Unfortunately, most children are not getting enough of the imperative vitamins and minerals that come from fruits and vegetables because they are not meeting the recommended Dietary Guidelines for Americans. In many cases, preexisting conditions, such as cost and proximity, prevent children from having access to fruits and vegetables.

An important element to gardening with children is teaching the importance of eating fruits and vegetables to help maintain a healthy lifestyle. The best way to get children to eat fruits and vegetables is to introduce them at a young age. If they are not exposed early on, they may never learn to eat fruits and vegetables. Through gardening, schools have the opportunity to help shape healthy eating behaviors. Gardening is an interactive approach to teach nutrition and allow children to have a role in making good food choices. It is also a fun way to instill positive attitudes and behaviors towards fruits and vegetables.

USDA Food Guide Pyramid

The USDA has created many resources to help educators introduce basic nutrition education in the classroom including the food guide pyramid tool.

Visit <http://www.mypyramid.gov/kids/index.html> to download nutrition education classroom activities to supplement activities in the garden.



Fruits and Vegetables for Health

Fruits and Vegetables for Health is a free curriculum guide available from the California Foundation for Agriculture in the Classroom. The comprehensive unit teaches students about the production, distribution, and nutritional value of California's fresh produce.

Geography, language arts, mathematics, science, health, and nutrition concepts are incorporated. It is aligned to the Content Standards for California Public Schools.

To download, visit <http://www.cfaitec.org/LessonPlans/LessonPlans.php>

ONLINE RESOURCES

Gardening

Western Growers Association – <http://www.wga.com>

University of New Hampshire Cooperative Extension – Agriculture –
<http://extension.unh.edu/agric/Agric.htm>

Master Gardeners of California – <http://www.mastergardeners.org>

4-H – <http://www.4husa.org>

Harvest of the Month – <http://www.harvestofthemonth.com>

UC Davis Sustainable Agriculture Extension –
<http://studentfarm.ucdavis.edu/Public/SustAgExt.htm>

California Conservation Corps – <http://www.ccc.ca.gov>

California Garden Clubs, Inc. – <http://www.californiagardenclubs.org>

American Community Gardening Association – <http://www.communitygarden.org>

Center for Ecoliteracy – <http://www.ecoliteracy.org>

Organic Gardening – <http://www.organicgardening.com>

Curriculum Resources

Agriculture in the Classroom – <http://www.agclassroom.org>

California School Garden Network – <http://www.csgn.org>

National Gardening Association – <http://www.garden.org>

Life Lab Science Program – <http://www.lifelab.org>

Gardening Supplies

Home Depot – <http://www.homedepot.com>

OSH – <http://www.osh.com>

Farm to School – <http://www.farmentoschool.org>

Kids Gardening – <http://kidsgardening.com>

Nutrition Resources

California Healthy Kids – <http://www.californiahealthykids.org>

USDA Food and Nutrition Service – http://www.fns.usda.gov/tn/Resources/fv_galore.html

USDA My Pyramid – <http://www.mypyramid.gov/kids/index.html>

Growing Great – <http://www.growinggreat.org>

CHILDREN'S BOOKS – FOOD FOR THOUGHT

Cave, Kathryn. (2003). *One Child, One Seed: A South African Counting Book*. Henry Holt and Co.

Child, Lauren. (2001). *I Will Never NOT EVER Eat a Tomato*. Orchard Books.

Davis, Aubrey. (1999). *The Enormous Potato*. Kids Can Press, Ltd.

dePaola, Tomie. (1997). *Jamie O'Rourke and the Big Potato*. Penguin Putnam Books.

Doudna, Kelly. (2002). *Do Not Squash the Squash*. Sandcastle.

Ehlert, Lois. (1993). *Eating the Alphabet: Fruits & Vegetables from A to Z*. Voyager Books.

Ehlert, Lois. (1990). *Growing Vegetable Soup*. Voyager Books.

Ehlert, Lois. (1992). *Planting a Rainbow*. Voyager Books.

Fleming, Denise. (1996). *Lunch*. Henry Holt and Co.

French, Vivian. (1998). *Oliver's fruit salad*. Orchard Books.

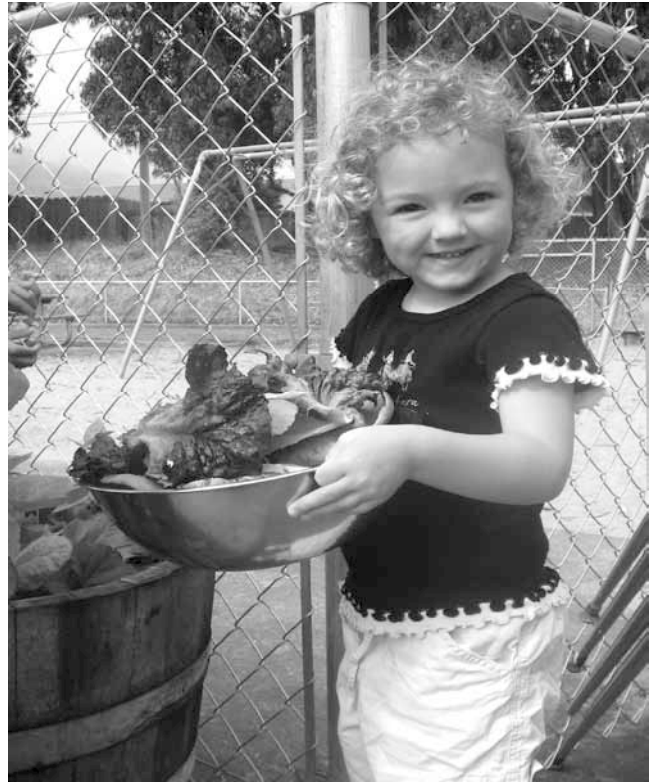
French, Vivian. (2000). *Oliver's Milkshake*. Hodder Children's Books.

French, Jackie. (2003). *Too Many Pears!* Star Bright Books.

Gibbons, Gail. (2000). *Apples*. Holiday House.

Gibbons, Gail. (1993). *From Seed to Plant*. Holiday House.

Goldman, Amy. (2002). *Melons for the Passionate Grower*. Artisan.



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Hall, Zoe. (1999). *It's Pumpkin Time*. Scholastic Paperbacks.
 Hall, Zoe. (1999). *The Surprise Garden*. Scholastic Trade.
 Jordan, Helene J. (1992). *How a Seed Grows*.
 HarperTrophy.
 Keeler, Renee. (1996). *Our Pumpkin*. Creative Teaching
 Press.

Krauss, Ruth. (2004). *The Carrot Seed*. HarperTrophy.

Maestro, Betsy. (1993). *How Do Apples Grow?*
 HarperTrophy.

McKissack, Pat. (1995). *All Our Fruits and Vegetables*.
 Many Hands Media.

Pallotta, Jerry, and Bob Thomson. (1992). *The Victory
 Garden Vegetable Alphabet Book*. Charlesbridge
 Publishing.

Richards, Jean. (2006). *A Fruit Is a Suitcase for Seeds*. First
 Avenue Editions.



Rockwell, Anne. (1999). *One Bean*. Walker Books for Young Readers.

Rothman, Cynthia. (1994). *Come into My Garden*. Newbridge Educational Publishing.

Ryan, Pam Muñoz. (2003). *How Do You Raise a Raisin?* Charlesbridge Publishing.

Schaefer, Lola M. (2003). *Pick, Pull, Snap!: Where Once a Flower Bloomed*. Greenwillow.

Scheer, Julian. (1964). *Rain makes applesauce*. Holiday House.

Schuetz, Sarah L. (2003). *An Alphabet Salad: Fruits and Vegetables from A to Z*. Capstone Press.

Schuetz, Sarah L. (2003). *Eating Pairs: Counting Fruits and Vegetables by Twos*. Capstone Press.

Seale, Gayla Dowdy. (2003). *The Little Squash Seed*. Overmountain Press.

Sendak, Maurice. (1991). *Chicken Soup with Rice: A Book of Months*. HarperTrophy.

Shaw, Charles G. (1988). *It Looked Like Spilt Milk*. HarperTrophy.

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Stevens, Jan Romero. (1995). *Carlos and the Squash Plant/Carlos y la planta de calabaza*. Luna

Rising.

Stonesifer, Gertrude. (1995). *The Peanut Butter Kid*. Wild Rose.

Sutton, Jane. (2006). *The Trouble with Cauliflower*. Dial.

Tabor, Nancy Maria Grande. (1996). *El gusto del mercado mexicano/A Taste of the Mexican Market*. Charlesbridge Publishing.

Titherington, Jeanne. (1990). *Pumpkin Pumpkin*. HarperTrophy.

Tofts, Hannah. (2001). *I Eat Fruit! Zero to Ten*.

Tofts, Hannah. (2001). *I Eat Vegetables! Zero to Ten*.

Tripp, Valerie. (1999). *A Reward for Josefina*. American Girl.

Vagin, Vladimir. (1998). *The Enormous Carrot*. Scholastic.

Weeks, Sarah. (2001). *Mrs. McNosh and the Great Big Squash*. Scholastic.

Wellington, Monica. (2004). *Apple Farmer Annie*. Puffin.

Williams, Rozanne Lanczak. (1996). *Oranges for Orange Juice*. Creative Teaching Press.

Williams, Sue. (1992). *I Went Walking*. Voyager Books.

Zevy, Aaron. (1996). *No Nuts for Me*. Tumbleweed Press.



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HEAD START GARDEN PROJECT COMMITTEE

Thanks to the 2006 California Head Start Association Garden Project Committee for help with this project.

- ✧ Julie Andrews – Economic Opportunity Commission of San Luis Obispo County, Inc.
- ✧ Cathy Bart – Marin Head Start
- ✧ Chris Berman – Marin Head Start
- ✧ Jackie Brown – Placer Community Action Council, Inc.
- ✧ April Cunningham – North Coast Opportunities Head Start Child Development Program
- ✧ Donna Harris – Contra Costa County Community Services Department
- ✧ Robin Pence – Marin Head Start
- ✧ Miriam Tcheng – Merced County Head Start
- ✧ Maria Tiangha – City of Oakland Head Start
- ✧ California Head Start Association Staff – Ms. Sherine Pahlavan, AmeriCorp Member, Community Development Associate, & Mr. Edward Condon, Executive Director

A special thanks to David Haskell, the Project Director of the Garden of Eatin' Project in Marin County for supplying valuable expertise as well as providing pictures taken by Edwardo Silva of the children working in the Garden of Eatin'. Use of the photos is with permission by North Bay Children's Center, Ms. Susan Gilmore, Executive Director.

