The primary objective in the Container Gardening project is to contribute to the development of 4-H members. Each part of the program attempts to meet some of the diverse and complex needs of youth and adults. Container gardening activities encourage active experiences which will:
• Create interest in and appreciation for gardening.
• Foster the growth of positive life attitudes by teaching a set of skills that could serve a lifetime.
• Focus attention to the factors of the biosphere—soil, air, water, and light. This will encourage sensitivity and feelings of responsibility for the tasks in caring for a growing plant.
• Help the members attain greater self-reliance and develop a positive self-concept through problem solving, creativity, and experimentation.
• Encourage participation within a group that has a purpose; each person will practice leadership, develop communication skills, and make a contribution.
• Deal with frustration and failure as an expectable part of the gardener's world.
• Enjoy the pleasure of gardening, a simple "dirt under the fingernails" activity.
• Contribute to better family health by producing nutritional vegetables and fruits.

Overview of the Project
Nearly everyone can container garden. No previous plant knowledge or gardening experience is necessary. Members may choose where they want to begin and what they want to do. This will depend on their experience and particular interests. Because gardening is an annual cycle of activity, either of the programs may be repeated.
• Container gardening starts with the planting of various seeds, transplanting, and growing the plants. Work begins with seedlings, cuttings, and indoor plants and progresses to the outdoor spring garden grown in pots, tubs, and boxes.
• Experimental container gardening may involve more exotic kinds of vegetables, foliage and flowering house plants, fruits, or landscape plants in containers either as indoor or outdoor specimens. Different fertilizer solutions may demonstrate the needs for different essential elements and symptoms associated with their absence or excess. The effect of light and light quality may also be investigated.

Responsibilities of Leadership
The leader or co-leaders organize the group. They help the members plan and carry out the program. They guide and encourage members in their individual 4-H projects. They involve and inform parents. Leaders teach the project information and act as resource persons. Any of these leadership tasks may be shared or divided as the leaders choose.
Older, experienced club members often like sharing leadership tasks. These energetic members enjoy meeting and talking to people. Some will be proficient at working projectors, gathering needed materials, and doing the club's footwork. Others may welcome a chance to act as teacher to the younger members. Problems? Your older members may have a fresh idea. It is important that the adult leaders recognize this important resource. In turn, it will give the older members an opportunity to practice and develop leadership skills. The younger members will benefit from another learning experience.

As a leader you are supported by the 4-H program, the Extension Service, and the sponsoring land grant university. You will be provided with leader guides, reference materials, films, and audio-visual materials. Extension Service personnel will conduct leader training meetings, answer questions, and refer you to community organizations.

It's rewarding to be a 4-H leader. Most people choose to be leaders because they:

- Learn new things and gain new skills.
- Meet other people and make new friends.
- Enjoy taking part in planning and making decisions.
- Sense the importance of working with a new generation and want to help with this responsibility.

This takes effort, but it's fun!

The Role of Parents

Parent participation and interest is vital to the success of a 4-H club. Inform parents about what is expected of their children in the entire program, not just the individual project. Tell them the date, time, and place of the meetings, tours, club activities, fair, and demonstration days. The best way to create a clear understanding of the 4-H program is through a friendly person-to-person contact with parents.

First, meet parents by telephone, personal visit, letter, or get-together. Invite them to one of the first meetings. Suggest ways in which they can:

- Help the member plan a project that is within his or her ability and fits the family capabilities.
- Provide materials and equipment such as seeds, plants, pots, etc.
- Give encouragement and praise; show interest.
- Provide transportation for some of the meetings and events.
- Be a resource person (if a parent has a special interest related to the project).
- Attend 4-H activities.

Member Recognition

There are many ways to reward 4-H members for effort and achievement. On a personal level you can recognize accomplishments and contributions of each member by:

- Words of praise and encouragement.
- Attentive listening and a receptive manner.
- Asking each person to share skills and knowledge.
- Letters, phone calls, and home visits.
- Sharing committee assignments and leadership responsibilities.
- Giving tangible rewards at achievement programs.

Tangible rewards include: food grown as a result of their efforts; membership in the 4-H program; ribbons; publicity; medals, pins, and certificates; parties, dining out; field trips and scholarships.

Think of awards as continuous events, not merely end products. The 4-H awards support our program, our educational commitments, and the goals the members have set for themselves. Successful award giving underlines these objectives and gives a pleasant feeling to everyone. To do this:

- Make sure that the activities of the members tie in with the educational objectives of the 4-H program.
- Stimulate members to greater learning.
- Make all rules, regulations, and directions clear and precise.
- Have standards that are neither too hard, nor too easy, but individually challenging.
- Encourage members to actively pursue their goals, one step at a time.
- Develop the spirit of cooperation among members.

Advantages of Container Gardens

- Container gardens have the same benefits as big gardens. You can enjoy the taste of fresh produce and the pleasure of growing your own food.
- It is a low-cost hobby.
- You can change the climate simply by moving the plants for better sun exposure and wind protection.
- It is easy to reach because the pots are close to the house.
- You can stretch the season by doing gardening procedures indoors.
- It is water efficient.
- You have easy soil preparation or no soil preparation with purchased soil mix.
- It is relatively pest free.
- There is little disease if the plants are intensively growing.
- There are many different container locations: windowsill, deck, patio, or between landscape plants.
- There is no need for a lot of tools. Use your fingers to pinch, prune, pick out weeds, and remove pests from leaves and stems.
Container Garden Resources

Use the following resources: field trips; speakers; retail and wholesale nurseries; garden stores and garden centers; seed companies; feed and seed stores; horticultural supply; landscape equipment and supplies; landscape gardeners; city parks and recreation department for community garden coordinators; garden clubs and horticultural societies; the Grange and Farm Bureau; the high school; community college or university horticulture program.

The Extension Service can provide you with many additional resources such as names of farms to visit, closest agricultural experiment station, and names of people with special horticulture interests.

Reference Materials

Reference materials include Extension publications, references listed at the end of this publication, business and industry pamphlets, and popular gardening books. You will need only a few reference resources to provide the technical information required to lead your 4-H members in any of the suggested activities.

Several references are listed throughout this leader guide. Normally, any one of the references will suffice. One or more of the alternate references should be available in your community. Extension publications are available through your county Extension office. Business and industry pamphlets are available from the companies upon request. Most of the popular gardening books are available in inexpensive paperback editions through your nearest bookstore. Most libraries have a wide selection of both the popular gardening books and gardening texts.

There are many reference sources other than those listed. Some county Extension agents and local garden club members can probably suggest additional reference sources if you have difficulty locating the ones suggested.

Suggestions for Leaders

Plan a series of group activities for the year. Refer to the outline of 4-H Container Gardening activities on page 10. Involve members in the planning of the year’s schedule at one of the first meetings so that everyone can plan and look forward to the coming events. Have exciting ideas to spark interest. This joint planning gives the member ownership in the club and builds enthusiasm for future activities.

Activities help the members prepare for and accomplish their projects with maximum learning and personal development. Energetic 4-H members will be anxious to start their gardening experience so it is important to begin the project.

Very easy activities are suggested in the following paragraphs to help you with the first meetings. Once interest is sparked, further activities will lead to the important planting of the spring and summer plants. An additional list of supportive topics will help fill in the time space where fall and winter seasons might be long. Also, the list will provide ideas for members who are searching for a special project. These topics are suggested for the use of the members with no designation as to age, ability, or level in the 4-H program. The member and helpful advice of a leader helps determine an enjoyable and challenging topic.

Container Garden Activities

Container gardening encourages the expression of a variety of ideas and teaches many skills. Some kinds of container gardening are fairly new, but all are gaining in popularity. It is not necessarily confined to a growing season and an off season.

Indoors, the container gardener can be busy all year:
- making sprouts
- raising salad greens and small tomatoes
- tending kitchen herbs
- growing house plants
- germinating seeds

Outdoors, the container gardener can extend the growing season by growing young plants for moving outdoors:
- sowing seeds of onions, planting buds of garlic
- growing some of the “cool” fall and winter vegetables
- planting spring bulbs

Year-round outdoor projects include:
- growing of dwarf evergreen shrubs and trees
- raising herbs
- caring for bonsai
- propagating woody plants by seed or cuttings

How will leaders and members spend their time? What kinds of activities can be anticipated by the leaders as part of the container garden program? Necessary skills are not too different from regular gardening skills. Leaders will find that they will be helping members:
- find the things they need—seeds, supplies, resource persons, answers to questions
- gather the materials for the meetings
- locate workspace and growing sites
- keep records, scrapbooks, diaries, photographs
- give reports, demonstrations, exhibits

Study, planning preparations, cleanup and maintenance chores make up the real work of the gardener’s world. Of these things, planning is probably the most important.
Program Plans—How to Start

Spring and summer vegetables/ornamental plants

Now everyone can grow fresh vegetables and ornamental plants. It is no longer necessary to have a plot of ground. You can grow plants in pots or any kind of container on a deck, balcony, porch, window box, or patio. It is important to choose the right spot for the containers. This program covers planning and planting of spring and summer plants, germinating seeds, planting transplants, and caring for these container plants throughout the growing season.

Purpose: This activity makes the member a full-fledged container gardener. Learning and using gardening skills, appreciating gardening throughout a lifetime, and cooking and tasting the vegetables are all goals of this project.

Things to do: planning—meeting

• Plan the date for planting. Allow plenty of time. Will there be plenty of work space?
• Select the place or places to grow the plants. It should be a south, southeast, or southwest location. Check for obstructions that may shade the space.
• Decide what kind of container to use. Where will you obtain the containers? Who will bring them? How will the containers drain?
• Organize the plant list. Refer to your local Extension office for information on varieties for container growing. Check dates for planting, seed depth, soil depth, and spacing.
• Plan the shopping list. Decide what to plant as seeds and what to purchase as transplants. What other things will you need to buy? Soil mix? If so, how much? You may mix your own soil as follows: ½ sterilized soil; ½ sharp sand; ½ bark, peat, compost, or a combination of these. Do you need labels? Fertilizers? Stakes? Pots?
• Plan the shopping trip. Perhaps several people will want to be the shoppers. Will they have a budget? Will they know the amounts to buy?
• Plan how to divide the supplies, seeds, and transplants. Will the seeds need to be repackaged in small envelopes? Would small cups or plastic bags hold the transplants?

Beginning Program Example

Lesson I—mini-gardens

It's easy and enjoyable to grow vegetables in a mini-garden. You can continue activity indoors, year-round, and need only the space of a windowsill. The 4-H member will have a sense of accomplishment when the plant responds to care and grows into an attractive, interesting plant.

This is an inexpensive activity. You may obtain better results planting in peat pellets. Purchase seeds of good quality and follow planting directions on the package. Start with marigold and tomato seeds (i.e., Tiny Tim) for indoors. Later, try lettuce, herbs, and snapdragons. Outdoors, in the fall, plant onion seeds and garlic. These can grow in pots all winter.

While caring for a plant, members learn that it needs air, light, water, soil, and heat to grow. This develops an understanding of the relationship between the plant in the garden and the food on a plate.

Planting A Seed

Purpose: Youngsters learn the first step in growing plants. They learn what a seed must have to sprout and start to grow. In general they will begin to understand the origin of food and develop an appreciation for flowers and ornamental plants.

Materials needed

• paper plate—use as a work area
• paper cup—small to medium size (i.e., 5 ounces)
• plastic bag—sandwich size
• tomato seed—2 or 3 seeds (i.e., Tiny Tim Patio or Sweet 100)
• peat pellet—a peat (organic mulch) planting pot that is sterilized, soaked with nutrients, and compressed into a pellet (costs about 1 ½ cents at garden supply stores)
• stick or pencil—for making hole in peat pot
• water—½ cup

Each participant needs a complete set of materials.

Procedure to instruct and show

• Fill cup ½ full with water. Overfilling makes a soggy pellet.
• Place pellet, with circle side up, into the water. Place the cup on the plate and wait 5 minutes.
• Review discussion topic while the pellet is soaking.
• Dump the pellet onto the plate after 5 or 7 minutes of soaking; it is now a peat pot.
• Use the stick or pencil to punch a hole ¼ to ½ inch deep in the center on top of the peat pot.
• Place one, two, or three tomato seeds into the hole and cover by removing a pinch of soil and sprinkling over the newly planted seed.
• Place peat pot into cup, then place cup into bag.
• Urge individuals to keep the peat pot in the cup and care for the plant as it grows. Remind members to water the pot when it is dry.

   When the roots penetrate the mesh walls of the peat pot, it is time to plant the peat pot in a larger container (subject for the next meeting).

Lesson II—planting
• Assemble materials: seeds, soil mix, containers, water, a water applicator, newspaper to cover work area.
• Read directions on the seed package; plant the seeds.
• Plant the young starter plants. Label and keep a record of the plant varieties.
• Water with a gentle spray.
• Cover containers with paper or plastic and place in a warm place. Water only when necessary. When the seeds sprout, uncover and place in the sun.
• Plan the watering and feeding schedules. Will members care for their own or will a committee do these chores?
• Pass out recordkeeping charts and take home sheets (if available).
• Refer to the “Problems of Indoor Gardening,” and “What Do Container Plants Want?” sections of this publication. You may wish to copy these topics for take home sheets.

   Read this leader guide before starting lesson III. There are many different activities that the 4-H club can do.

Further Topics
• Harvesting and storing vegetables. When is it time to pick home grown vegetables? How do you save vitamins?
• Harvesting and curing herbs? How do you store herbs?
• Uses of herbs in the kitchen. Herbs in Middle East Cooking.... Italian....Spanish.
• Medicinal Uses of Herbs.
• Which herbs grow in the shade? What herbs can be landscape plants? Parking lot?
• How can fruit be grown on walls, fences, trellises, and screens?
• Can true dwarf and semi-dwarf fruit trees be container subjects?
• Report on the book, All About Tomatoes. What are the different kinds? Italian, Beefsteak? Acid? Pear? What tomato seeds can be eaten for protein?
• Vegetables and fruits that can be grown in among the landscape plants.

• How does drip irrigation work for pots and containers?
• What are some of the indoor citrus? How do you grow them?
• Using auxiliary lighting for Northwest short days on indoor gardens.
• Hydroponics—and how it works.
• What is compost? Can composting be done in containers?
• Can birds be attracted to the patio garden? Deck? Balcony?
• How do you manage the wind? What devices can be built cheaply? What is a sun trap and who wants it?
• The uses of wire mesh, black and clear plastic, jute cord, netting in the container garden.
• Keep a diary like Thomas Jefferson's garden book. Read Thomas Jefferson's Garden Book and share some pages with the club.
• Review all of the last year's issues of one of the popular garden magazines, like Sunset or Flowers and Garden magazine. Pick out those articles that pertain to container growing. Report and share what you have learned with your club (and other clubs).
• Have a meeting with another club. Invite them to make vegetarian pizza. Plan to have an exchange of information—you'll tell them about herbs and they'll tell you about raising strawberries in hanging baskets.
• The what and why of soil mixes. Soil-less mixes.
• Winter vegetables in the container garden.
• Plan an excursion to a botanical garden or a Japanese garden. You may come home with some new ideas for a special container specimen.
• Invite someone to talk about native plants. Ask that person which ones would be good for container growing.
• Check up on the nutritional merits of vegetables by their color. Make a chart for white, green, yellow/orange, and red/purple vegetables.
• How do you build a wall garden?
• Animal and insect predators—friendly and unfriendly. Can you find a recent movie on this subject?
• Plan a sale of spring transplants, seeds, herbs, vegetables.
• What are some of the new kinds of oriental vegetables? Will they grow in containers? How should they be cooked? Demonstrate and give samples to eat.
• Microclimate—what can the container gardener do about extremes in temperature? Heat loss at night? Storm winds? Snow and ice? Sudden drop in temperature?
• Can a container gardener make money by growing native tree seedlings for selling?
• Can vegetables grow in containers on waste land? Is it profitable?
• Earn extra money by plant sitting.
• Pet plants—pick a special kind of house plant like figs (Ficus) or Ivy or Rex Begonia. Investigate how many kinds (varieties) there are. Where can you find these plants? What kinds of growing conditions do these plants like? Make a collection of one kind of plant. Show and tell about it at a 4-H meeting. Exhibit your collection at the county fair.
• Book reports—read about people who have had incredible experiences being plant "explorers." For example, The Plant Hunters, Traveler in a Vanished Landscape.
Kinds of Containers

A two-gallon pot is ideal—use this as a gauge in selecting containers. Other options for containers are:

- jiffy pots
- egg cartons or muffin tins
- disposal plastic or wax-coated drinking cups
- clay flower pots and saucers
- berry baskets
- waxed cardboard fruit boxes
- plastic jugs and bottles with tops cut off (save tops for early spring protection and hardening off outdoors)
- grocery tins, paint cans, and paint buckets
- old pots, pans, casseroles, and kettles
- woven baskets
- vinyl and rubberized waste baskets, garbage cans, dish pans or basins
- heavy plastic bags—sealed; plants grow in slits or punctures
- wooden fruit boxes
- old tires
- old sinks, bathtubs, toilets
- windowsill boxes
- old water tanks, cut in half lengthwise
- old brake drums
- gutter troughs
- lids of water tanks, for very shallow rooted vegetables and herbs
- galvanized wire circles
- concrete blocks
- chimney flue tiles
- plant pyramids of wood (if made of fir, treat with copper naphthanate preservative; do not use creosote preservative)
- second-hand pots from landscape contractor

Caution: Remember that lightweight pots containing soil-less mixes are easily blown over by the wind, and hanging baskets will need substantial support. For most vegetables plan for 9 inches of soil depth. Be sure to scrub all containers before filling with soil.

All pots and containers must have drainage holes, preferably on the side of the pot at the bottom. Put a piece of wire screen, broken pottery, or ball wire over the holes to prevent soil from washing away. Set the containers on blocks or scrap lumber. Remember that indoor pots require drainage saucers or pans.

Orientation to the Sun

Planting a container vegetable garden is similar to planting in the back yard. First, select the best site for the container garden. The following list indicates the exposure, the number of hours of sunlight available, and the vegetables that grow best there.

- Southern exposure—full sun all day. This is a hot location. Vegetables: tomatoes, peppers, green beans, egg plant, squash, cucumbers.
- Eastern exposure—the morning sun. The rising sun tends to be cooler. The area may be shaded from afternoon and evening sun. Vegetables: lettuce, spinach, scallions, radishes, Swiss chard. Herbs: parsley, chives.
- Western exposure—the afternoon sun. The day has warmed, the surfaces are warm and reflecting heat into the evening. Vegetables: beets, carrots, Swiss chard, onions, green beans.

These sunlight conditions are modified and changed by buildings, trees, hills, and the lay of the land. For example, if your third-floor balcony faces south but the building next door is eight stories high, your southern exposure is not sufficient. Look for obstacles and observe the amount of sun you get. Remember, roof and balcony overhangs reduce the amount of sun, especially close to the building wall.

References: 2, 12, 14, 19, 23, 25

Problems of Outdoor Gardening

Container soil warms up and dries out faster than ground soil. This rapid drainage and drying means that the gardener must water more frequently and thoroughly.

Since container plant roots are not buried in the ground, protect them from temperature extremes. The container must withstand continued watering and drying, hold moisture long enough to provide plant needs, and drain easily to keep roots from being waterlogged.

As plants grow, more watering is required, sometimes several times per day. Add fertilizer periodically to maintain good plant growth.

Check the section on “Kinds of Containers”.

Problems of Indoor Gardening

Plants grown indoors are subject to dark months, short days, and low light. Use an auxiliary light 6 to 12 inches from the plant for maximum intensity. Use one cool fluorescent and one incandescent bulb.

The ideal room temperature for plants is 65 degrees F during the day and 50 degrees at night. Find a cool room to raise your plants.

The air in most homes and classrooms is also too dry for plants. Try enclosing the container plant in a plastic bag, putting pans of water near the plant filled with gravel or pebbles, or placing in a moist room (a kitchen or bathroom) to increase humidity.

All surplus water must run off, but it cannot run on the floor. Use draining trays and saucers to eliminate staining. Make sure the bottom of your tray is moisture-proof.

If you have a house pet, make your growing area off-limits. Pets can knock over lightweight pots, chew leaves, and dig and urinate in pots.

Remember, too, that ceiling and floor temperatures may vary greatly from tabletop temperatures because warm air rises and cool air sinks. Be sure to carefully choose your site or use a fan to circulate the air.
What Do Container Plants Want?

Container plants like regular attention and care. They:
- like 6 to 12 hours of sunlight a day.
- like warm days (65 to 75 degrees F) and cool nights (50 to 55 degrees F).
- need regular feeding for continual growth.
- need enough water to maintain growth and to flush salts through the pot.
- like a porous soil mix.
- like moderate humidity or moist air.
- like air circulation.
- like good drainage.
- like mulch (sawdust, compost, bark, gravel, or pebbles).
- do best when their leaves dry at night.

What Do Plants Need?

Soil mixtures
Purchase special mixes such as Jiffy Mix, Redi-Earth, Pro-Mix, First Step, or Super Soil or make an excellent container soil mix (1/3 loamy soil; 1/3 sharp sand, perlite, or vermiculite; 1/3 peat, bark, compost, or other organic material). This mixture makes a lightweight soil mix and promotes root growth and drainage. Many gardeners also recommend sterilizing the soil.

Dampen the soil mix before filling the containers.

Fertilizers
You may want to add a complete slow-release fertilizer to your soil mixture. Many people prefer feeding their plants throughout the growing season with a water-soluble fertilizer—dissolve one tablespoon of complete fertilizer (8-24-8, 10-16-8, 10-20-10) in 1 gallon of water and apply every three weeks. There is no fixed rule—if your plant's leaves look pale green or yellow, you may need to fertilize them more.

Dry fertilizers are more difficult to apply correctly and tend to burn the plants. Organic gardeners may prefer to use fish emulsions, blood, and bone meal. Manures and composts are also good sources of organic matter. They act as soil conditioners, but usually require supplemental fertilizer applications.

Water
Container soil heats up and dries out rapidly because there is no subsoil to draw moisture. Check soil often for moisture; water when the soil is dry to a depth of one-half inch.

During early growth plants won't need as much water as when they are larger. Toward mid-summer and as plants mature it may be necessary to water every other day, once or twice a day, or more. It depends on how porous the soil is, the particular plant crop, and amount of sunlight.

Water thoroughly and slowly. A hard, fast stream of water aimed at the container knocks soil away from top feeder roots and compacts and crusts the soil surface. Use a slow, even stream of water and watch for it to seep out the bottom. Water in the early morning so that leaves are not wet at night when temperatures drop and mildew and disease organisms flourish. If plants wilt temporarily during the heat of the day, spray with water.

References: 6, 8, 11, 15, 16, 24

Planting Techniques

Potting
Thoroughly scrub all used containers. Presoak porous wood and clay containers so the containers do not pull the water from the soil and create a gap between the soil and the pot wall. If this gap exists, irrigation water runs down it, and the roots and soil will remain dry. Don't forget to dampen the soil mix before potting.

References: 6, 8, 15, 19, 22, 24

Seed planting
References: 2, 5, 7, 9, 13, 18

Transplants
References: 2, 6, 7, 11, 16, 19

Seedling care
If the seedlings are crowded, remove or thin small and weak plants. As seedlings grow, they will need room for their developing roots. If it is necessary to transplant before moving outdoors, move up only one pot size. You can transplant into other trays, paper cups, or other suitable containers. Allow 1 to 2 inches between plants in trays or flats. Check to provide drainage. The plants may be kept in these containers until they are ready to be set outside. Transplant seedlings as soon as the second pair of leaves appear.

Once the seedlings emerge, give them as much sunlight as possible. Twelve hours a day is recommended for vegetables and herbs and five hours a day for flowers.

If sunlight is impossible, use artificial light. Use two 40-watt fluorescent tubes, burned 16 hours a day, 6 inches above the plants, one incandescent bulb with one fluorescent light, or a combination of fluorescent and incandescent light. One incandescent watt to each five fluorescent watts have been suggested, as have the ratios of 1:4, 1:3, and 1:2.

References: 1, 7, 9, 18, 20, 21, 26

Succession planting
Vegetables such as carrots, radishes, and lettuce have several dates listed on the enclosed chart. By planting small amounts at different times, you will enjoy a continual harvest.

References: 9, 13, 16, 21, 25

Varieties
Check with your local Extension office for plants that grow well in your area.
Management Techniques

**Hardening off transplants**

Be sure to acclimatize your seedlings before transferring them outdoors. Tender, succulent seedlings can be badly shocked or killed by moving directly from an indoor growing area to outdoors. Condition them by degrees. Hardening off is a simple procedure that takes about one week:

- Gradually give the plants less water, a cooler environment, and more light.
- Use a cardboard box about one foot deep as a carrying tray; the sides of the box will deflect the wind.
- Move the box into full sunlight over a four-day period to avoid sunburning plants. Start with a shaded area (such as the corner of a porch) away from the wind.
- Protect the plants from frost.
- Give the plants full sunlight on the final two days of hardening off. Hardening can be overdone—do not allow plants to turn yellow or develop purple color in leaves (indicates a nitrogen or phosphorous deficiency).

Give the plants a thorough watering an hour before transplanting. If you can’t immediately transplant, a slight delay will not affect the plant. Hardened off plants grow slowly and will keep for days with only an occasional watering.

Remember, tender vegetables can only be hardened against wind and dryness, never against frost.

**References:** 7, 17, 21, 23, 25

**Weeding**

Pull weeds as soon as they appear without disturbing the roots of the container vegetables. If a weed grows a large root system, it is better to clip or cut it off ¼ to ½ inch below the crown.

**References:** 1, 7, 20, 21, 26

**Training and supporting**

Vegetables such as beans and peas, tomatoes and cucumbers, and summer squash need training and support to increase yield.

Pole beans and peas are climbers. Use strings, chicken wire, or galvanized wire to support vines. Most supports should be 36 inches tall.

Stake tomatoes using cloth ties. Carefully attach the stem to the stake immediately below the blooms. Pinch off suckers that form between the leaf attachment and the main stem.

An alternative to staking is using a wire cylinder (such as chicken wire) about 2 ½ to 3 feet high. This fits around the tomato plant and the container. The cage supports the plant and eliminates tying and pruning. Early in the season cover the cylinder with clear plastic to hasten fruit ripening.

Train and tie cucumbers and summer squash along a fence or other supports to keep fruits off the ground and reduce space needed. Be sure to softly tie the vines in several places (especially below the fruits) so that winds cannot whip the vines.

**References:** 6, 8, 9, 16, 17, 21, 27

**Insect and Disease Control**

People who container garden do not need to worry too much about insects and diseases. However, when necessary, the same principles apply as with other gardens.

The important thing to do is to choose adapted varieties such as those suggested in this publication and to keep plants growing well. You may request pest control and disease information from your county Extension office. They will send you the most current methods.

**References:** 7, 9, 12, 17, 26, 28

**Mulches**

Apply a mulch after the soil has warmed up in the spring. Mulches can serve many purposes. One inch of bark, sawdust, or pebbles can:

- prevent weeds.
- keep water from evaporating quickly.
- keep soil from crusting.
- protect fruits from rot organisms that rest on or near the ground.

A mulch will keep soil temperature from getting too high on a hot day. But it can also prevent the soil from warming up in the early spring and slow seed germination and transplant growth.

**References:** 7, 9, 13, 16, 20, 26
Wind protection

When the vegetables gain size and leaf area they may bend or tip over by winds. Provide screening or support or choose a protected location.

Winds that whip leaves dry out the plants faster than roots can supply water. This sets up conditions of stress. The plants may wilt or suffer a setback that will curtail your vegetable production.

References: 25

Trouble-shooting List

Container vegetables are dependent on the attention and care of the gardener. Use this checklist:

- Look closely at the plant in a regular manner. Set up an enjoyable schedule. The same time each day is easier to remember and is more efficient.
- Feel the soil. Is it soggy—the pot needs more drain holes. Is it dry—water until water comes out the drain holes.
- Have the plants stopped growing? Maybe the plant is not warm enough. Move to a warmer place, but not next to a heater. Maybe the plants need fertilizer. Remember, continual feeding equals continual growth, and far less pests and diseases. Fertilize with a soluble fertilizer (5-10-15 or 10-10-10) once a week. Apply the fertilizer to moist soil. Check your light source—is it too dark?
- Are the leaves dry and shriveled? Maybe it is too windy—move to a more protected place or make a windscreen.
- Are the leaves burned? Maybe there is too much sun. Move to another place to make a sunscreen for protection part of the day.
- Is there a heatwave? Cool the plant with water. Mulch with bark, chopped straw, compost, gravel, or pebbles.
- Are the leaves dry and shriveled? Maybe the air is too dry. Wash the leaves of the plant. Put moisture in the air with trays of water set around the plants. In the house, boil water to add steam to the air.
- Are the plants weak with long drooping stems? Are the leaves far apart? Maybe the plants are starved for light. Move to brighter sun or add light.
<table>
<thead>
<tr>
<th>Subject</th>
<th>Activity</th>
<th>Purpose</th>
<th>Things to do</th>
</tr>
</thead>
<tbody>
<tr>
<td>Herbs</td>
<td>Excursion</td>
<td>Get acquainted with various herbs. See, touch, smell, taste, admire.</td>
<td>Buy seeds or plants for container kitchen garden. Start with oregano, thyme, parsley, sweet basil, mint, sage, bay. References: 1, 2, 6, 16, 26</td>
</tr>
<tr>
<td>Herbs</td>
<td>Gardening</td>
<td>Make your own indoor herb garden</td>
<td>Plant seeds and starter plants of herbs in containers for an indoor kitchen garden. References: 1, 2, 6, 16</td>
</tr>
<tr>
<td>Herbs</td>
<td>Cooking</td>
<td>Enjoy the good taste of herbs in food.</td>
<td>Make a pizza or spaghetti sauce with parsley, oregano, sweet basil, bay leaf; plan a pizza-making party. References: 1, 2, 6, 16</td>
</tr>
<tr>
<td>Tomatoes</td>
<td>Gardening</td>
<td>Grow tomatoes indoors all year. Learn to transplant vegetables.</td>
<td>Plant one Tiny Tim plant per person into a hanging basket. Start the seeds in peat pots if you wish. Refer to instruction sheet. References: 2, 5, 7, 9, 13, 19</td>
</tr>
<tr>
<td>Tomatoes</td>
<td>Cooking</td>
<td>Make pocket sandwiches</td>
<td>Make pocket sandwiches of tomatoes, lettuce, cheese, and mayonnaise on pita bread.</td>
</tr>
<tr>
<td>Sprouts</td>
<td>Excursion</td>
<td>Visit a granary.</td>
<td>Observe all kinds of grain. Get sample of untreated grain. Plant seeds of oats, rye, red clover, wheat, and triticale in soil; mix in milk cartons or saucers. Harvest only the top 2 to 6 inches by cutting with scissors. Use in salads. References: 2, 19, 20</td>
</tr>
<tr>
<td>Sprouts</td>
<td>Excursion</td>
<td>Visit a health food store.</td>
<td>Find a variety of seeds. Obtain information about how to grow sprouts. Buy seeds of cress, alfalfa, red clover, or annual rye for making &quot;green sponges.&quot; References: 2, 19, 20</td>
</tr>
<tr>
<td>Sprouts</td>
<td>Making &quot;green sponges.&quot;</td>
<td>Grow sprouts quickly.</td>
<td>Get several fluffy sponges. Wet the sponges, sprinkle with seeds, and hang by string in a sunny window; keep the sponge moist by spraying with water. Sponge need not be soggy or dripping. Pull off the tiny sprouts for tastes when the sponges turn green. Add to salad or your peanut butter sandwich. References: 2, 19, 20</td>
</tr>
<tr>
<td>Sprouts</td>
<td>Starting sprouts</td>
<td>Grow different kinds of nutritious sprouts, beans, lentils, peas.</td>
<td>Collect beans and lentils from home kitchens; use the jar method to sprout. References: 2, 19, 20</td>
</tr>
<tr>
<td>Sprouts</td>
<td>Cooking</td>
<td>Learn how to make a Chinese-style dish. Use bean, lentil, and pea sprouts</td>
<td>Make a Chinese stir-fry meal in the electric skillet using various sprouts and any other kind of vegetables and bits of meat as you desire. Cashews are a tasty meat substitute.</td>
</tr>
</tbody>
</table>

References: 1, 2, 6, 16, 26, 2, 5, 7, 9, 13, 19, 2, 19, 20
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</table>
| Seed catalogs        | Letter writing  | Prepare a seed order.                | Get a list of seed order companies.  
**Reference:** 2  
Ask each club member to write one or two catalog companies. Have members bring the catalogs to a meeting to share with each other. |
| Pet Plant            | Field trip      | Visit a nursery that raises house plants. | Select and purchase a plant, if desired. Check on the plant's native environment, then you will know what conditions it prefers.  
**References:** 6, 12 |
| Pet Plant            | Repot a plant   | Learn a gardening skill.             | Follow directions on how to pot a house plant.  
**References:** 6, 8, 11, 12, 22, 24, 26 |
| Room Plant           | Raise a plant in every room | Grow a plant in every room of the house. | Try hanging plants, terrariums, dish gardens, etc.; one for every room in the house.  
**References:** 6, 8, 11, 12, 14, 22, 23 |
| Fall onions and garlic | Plant seed in pots outdoors | Grow something in the wintertime. | Get onion seeds and garlic buds, containers, soil and plant.  
**References:** 2, 7, 8, 16, 24 |
| People               | Field trip      | Visit a garden club.                 | Visit a special event of the local garden club.                                                                                                                                                           |
| Salad garden         | Field trip      | Visit the grocery store for tasting fair. | Speak to the manager of a grocery store to arrange a visit. Look at all the kinds of leafy green vegetables: Swiss chard, endive, Chinese cabbage, spinach, lettuce, collard greens, mustard green, kale, etc. If possible, make a tossed green salad or a vegetable dip.  
**Reference:** 5 |
| Salad garden         | Gardening       | Raise salad vegetables indoors.      | Get seeds of lettuce, radishes, carrots, green onions, Swiss chard, mustard greens. Plant in containers indoors.  
**References:** 1, 2, 5, 6, 7, 9, 13, 16, 19, 21, 25, 27 |
References

5. *Choosing and Using Western Vegetables*, PNW 45.
8. *Gardening in Containers*, Lane Books (Sunset), Menlo Park, CA.
17. *Ortho Lawn & Garden Books*, 76-NW-999.
26. *Western Garden Book*, Lane Books (Sunset), Menlo Park, CA.

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Prepared by Peggy Fields, Extension volunteer, and Bill Boldt, Extension 4-H and youth specialist, Oregon State University. Ray McNeilan, Duane Johnson, and N.S. Mansour of the Oregon State University Extension Service made significant contributions to its development. Specialists from the University of Idaho and Washington State University also reviewed the material.

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