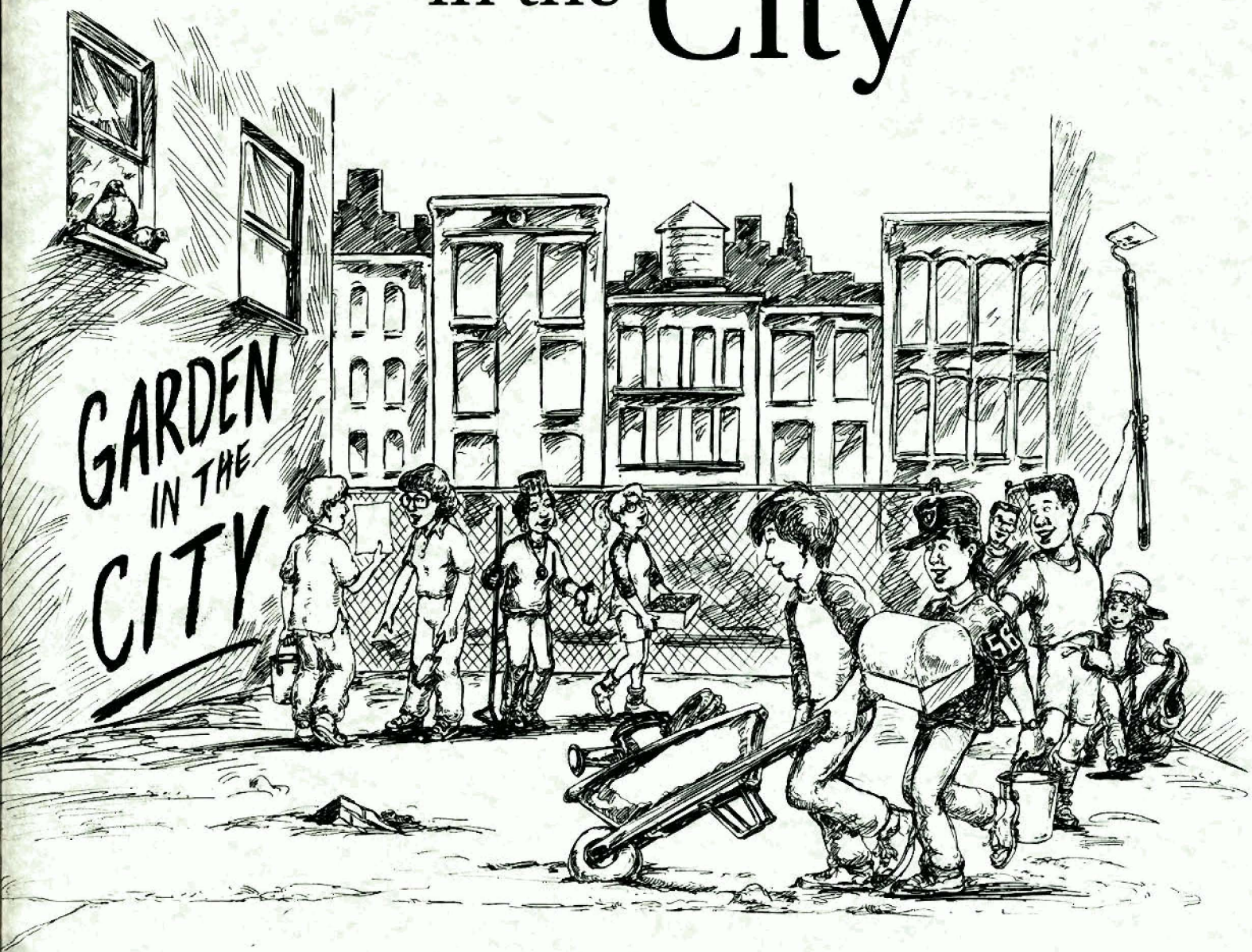
A 4-H LEADER'S GUIDE FOR URBAN GARDENING

Garden in the City



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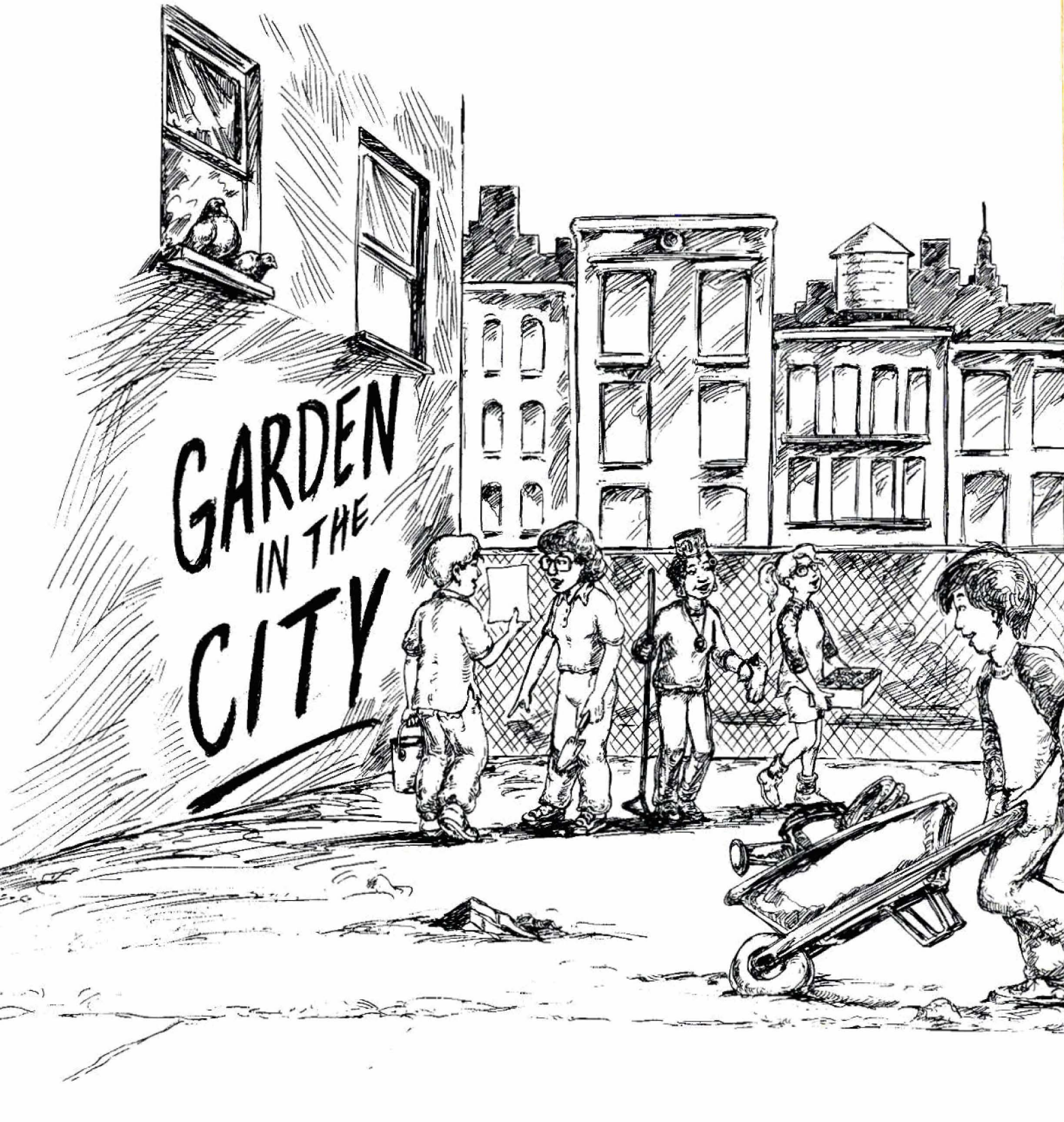
GARDEN
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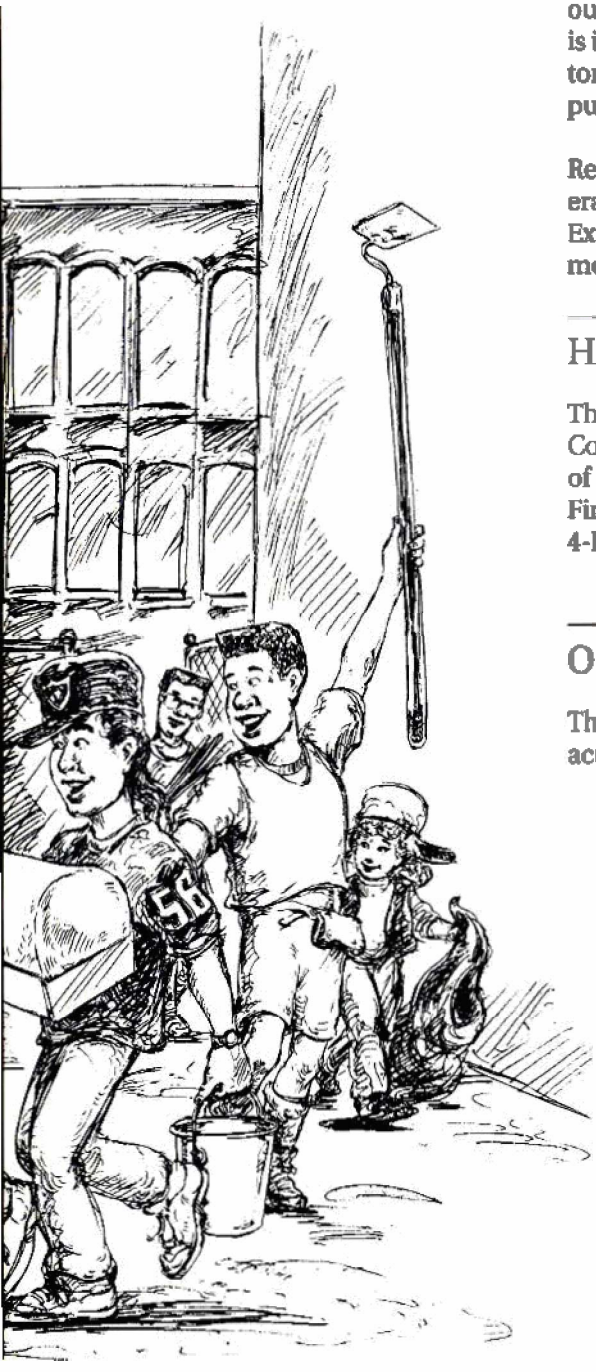
Introduction



The Garden in the City project is designed for club members and leaders who have had little experience with gardening. The project begins in early February with indoor gardening activities and ends in June with an outdoor garden plot. Most of the vegetables you will plant grow relatively quickly, so at the last project meeting you can have a harvest party, eating the food you have grown. Scheduling the project to end in early June allows completion before school is out and reduces the amount of weeding the members have to do. If your group is interested, you can plant a second crop of warm-weather vegetables, such as tomatoes, corn, beans, and squash, to be harvested later in the summer. This publication does not cover summer gardening activities.

This leader's guide is a step-by-step guide to beginning gardening. References are given for more in-depth information, usually in Cornell Cooperative Extension publications available at your county Cornell Cooperative Extension office. Your extension agent will also be able to supply you with more information.

History of the Project

The Garden in the City project began in 1987 in New York City when Cornell Cooperative Extension agents recognized the need for a project that would be of interest to urban gardeners. Charlie Mazza, Jackie Davis-Manigaulte, Bill Fink, Linda Ameroso, and Cheryl Best helped with the initial writing. Several 4-H leaders in Brooklyn piloted the project in their clubs.

Organization of the Guide

The project is organized so that it is easy to get started and move from one activity to the next. Each lesson contains the following information:

- *Approximate Time Needed to Complete the Lesson*
  The approximate length of the lesson will vary depending on the number of members present, the age of the members, and the size of the garden.
- *Goals*
  The purpose of the lesson is described. Review the goals and try to meet them during the meeting.
- *Before the Meeting*
  This section describes the preparation needed before your group meets.
- *Supplies*
  Be sure to gather all the supplies before the meeting. Before some meetings, you will need to contact the members and ask them to bring materials.

• *During the Meeting*
The information you will need to introduce and conduct the lesson is given under the following topics:

Introduction. Ways to introduce the lesson to your club are suggested. Included is information on the basic concepts of the activity as well as a short description of what will occur.

Activities. After the introduction, you will find one or more activities. These are explained step-by-step.

• *Additional Activities*
This section describes optional activities which you might want to try with your club after completing the lesson.

• *Notes*
Advice, more detailed information, or additional activities are inserted in some lessons as ***Notes.*** Although you can teach every lesson successfully without including all the material in the notes, they offer helpful hints, introduce more advanced concepts, and give sources of additional information.

Preparing for the Next Lesson
This section is included when it is necessary for you to prepare materials or ask members to bring supplies for the next meeting.

How to Teach This Project

Be prepared for the lessons. Carefully read over each lesson about one week before the club meeting is scheduled. This way you'll be more familiar with the information and confident when you teach it.

• *Plan* how you want to teach the lesson and explain the concepts.

• *Gather supplies* before the meeting. Previewing the lesson in advance gives you a chance to prepare and assemble the items you'll need.

• *Find a garden plot.* If you do not have a piece of land to use as a garden plot, start searching for one as soon as you decide to do the project. You can use a backyard, rent a plot in a community garden, or perhaps use a vacant lot. Before you use a vacant lot, however, you need to get permission. Find out your city's policies on the use of vacant lots. Some cities, such as New York, have a city agency that helps organizations set up gardens on city-owned vacant land. Private lot owners also may allow you to use their property. You also could try rooftop or container gardening. Ask your Cornell Cooperative Extension agent for information. When you have selected a site, you may want to ask your extension agent to visit it to make sure that it is appropriate.

• *Be enthusiastic.* Enthusiasm is contagious! People will always pay attention to a person who is interested in what he or she is talking about, and your members will be eager to learn more about something that interests you. Children are excited by things that are alive. They are curious about nature and how things grow. For many city youths, this project will be their first chance to grow plants on their own. They will be very proud of their garden.

• *Don't be afraid to say that you don't know* the answer to a question. You are not expected to know everything, but try to follow up on questions. Look up answers in this leader's guide or contact your local Cornell Cooperative Extension agent. Answer the question during the next meeting.

Project Schedule

If your club wants to complete the project by June, it is important to follow this schedule. Your group, however, may have a more flexible time line. Or your group may decide to replant and care for the garden after the scheduled lessons are completed.

The first leader training session on the schedule below would be a good time for a Cornell Cooperative Extension agent to work with you and other leaders on ways of introducing and carrying out this curriculum. At the second leader training session, the extension agent can describe the steps involved in planting and maintaining the garden.

January	25	Leader training
February	7	Lesson 1: Garden Box
	14	Lesson 2: Starting Sprouts
	21	Lesson 3: Eating Sprouts
March	1	Lesson 4: Starting Seeds*
	10	Leader training
	15	Lesson 5: Planning the Garden
	30	Lesson 6: Cleaning the Site
April	7	Lesson 7: Breaking Ground
	15–30	Lesson 8: Planting†
	30	Lesson 9: Weeding
May	10	Lesson 10: Thinning
	22	Weed and thin again
June	15–30	Lesson 11: Harvesting and Eating the Garden Salad

* It is important to schedule this lesson on or before March 1 so plants are large enough to be transplanted into the garden by mid-April.

† In the Long Island, New York City, and lower Hudson areas, plant the garden about April 15 so the vegetables will be ready to harvest about June 15. In upstate New York, plant by April 30 for a late June harvest.

Pest Control

The information given herein is supplied with the understanding that no discrimination is intended and no endorsement by Cornell Cooperative Extension is implied.

Pesticides are chemicals that control plants, insects, and diseases, including ones that can harm vegetables. If you decide to use pesticides, you must be very careful to protect yourself and to use the amounts indicated on the label. The use of special equipment is frequently required when pesticides are applied. Pesticides are usually not recommended for

use in small gardens because they need to be handled correctly and they can be dangerous. The garden in this project is grown early in the season when weeds are growing less rapidly and most insects and diseases are not a problem.

References

Back, C., and B. Watts. *Bean and Plant.* Morristown, N.J.: Silver Burdett Co., 1984.

Doty, W. L., R. Hildebrand, C. Malcolm, R. Beatty, M. Landis, and J. Dare. *A Child's Garden.* San Francisco: Chevron Chemical Company, Ortho Division, 1989.

Johnson, H. *From Seed to Salad.* New York: Lothrop, Lee, and Shepard, 1978.

Kraus, R. *The Carrot Seed.* New York: Harper and Row, 1945.

Ocone, L., and E. Pranis. *Guide to Kids' Gardening.* Burlington, Vt.: National Gardening Association, 1990.

Rylant, C. *This Year's Garden.* New York: Bradbury Press, 1984.

Selsam, M. *The Plants We Eat.* New York: William Morrow and Co., 1981.

Many Cornell Cooperative Extension publications are available at your local extension office, including *The Home Vegetable Garden* (IB 101), *Vegetable Fare: Displaying Vegetables at Their Best* (L-10-14), *Weed Control for the Home Vegetable Garden* (IB 216), *and Your 4-H Vegetable Garden Project: A Planting Guide* (H-10-4). Contact your local Cornell Cooperative Extension agent for more information.

Garden Box

Approximate time the lesson will take: 60 minutes

GOAL

• To practice planting seeds and to understand what plants need to grow.

Before the Meeting

Read the lesson carefully and gather supplies.

Supplies

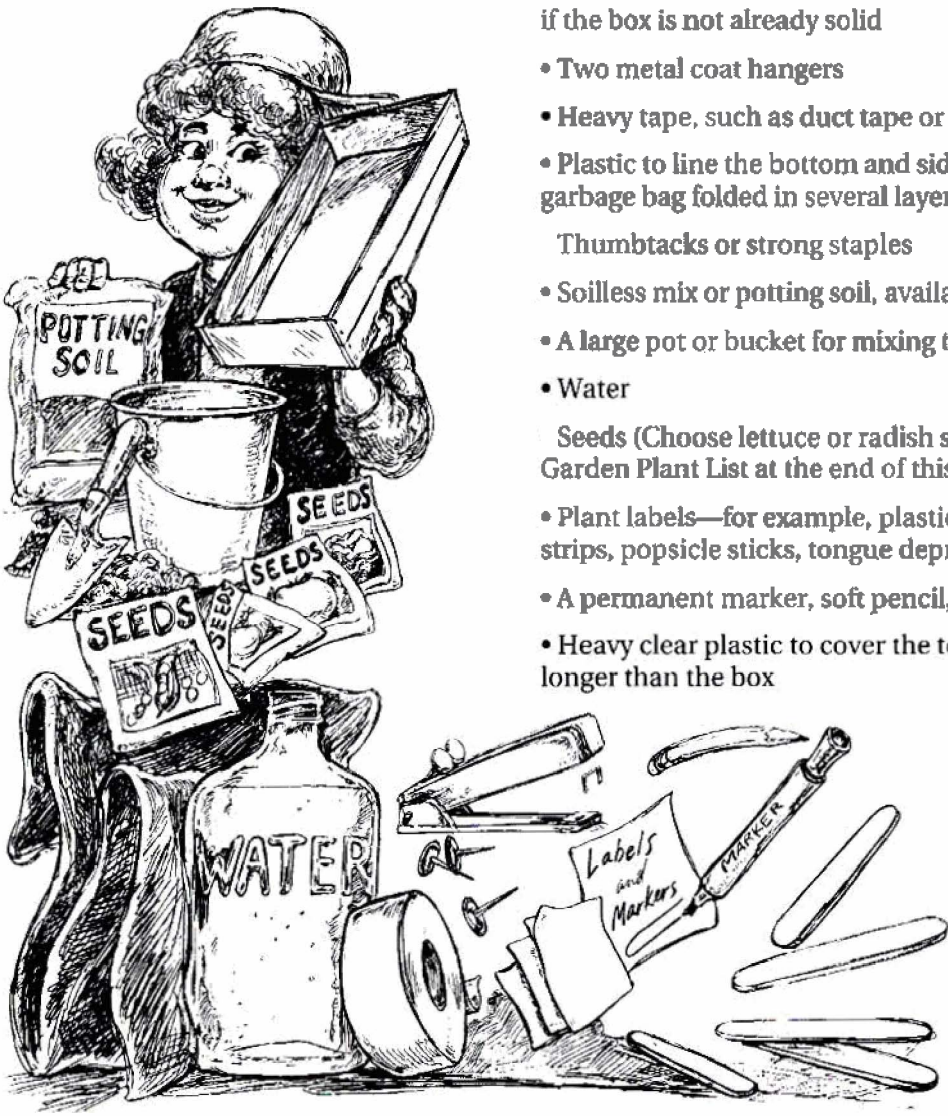
- A wooden box, 1 to 1 1/2 feet wide and 1 1/2 to 2 feet long with sides at least 2 to 4 inches high (The boxes in which grapes or kiwi fruit are shipped to the supermarket are ideal, and supermarkets usually give them away for free.)
- Cardboard or another stiff material, cut to fit in the bottom of the box if the box is not already solid
- Two metal coat hangers
- Heavy tape, such as duct tape or electrician's tape
- Plastic to line the bottom and sides of the box (A heavy plastic garbage bag folded in several layers is fine.)

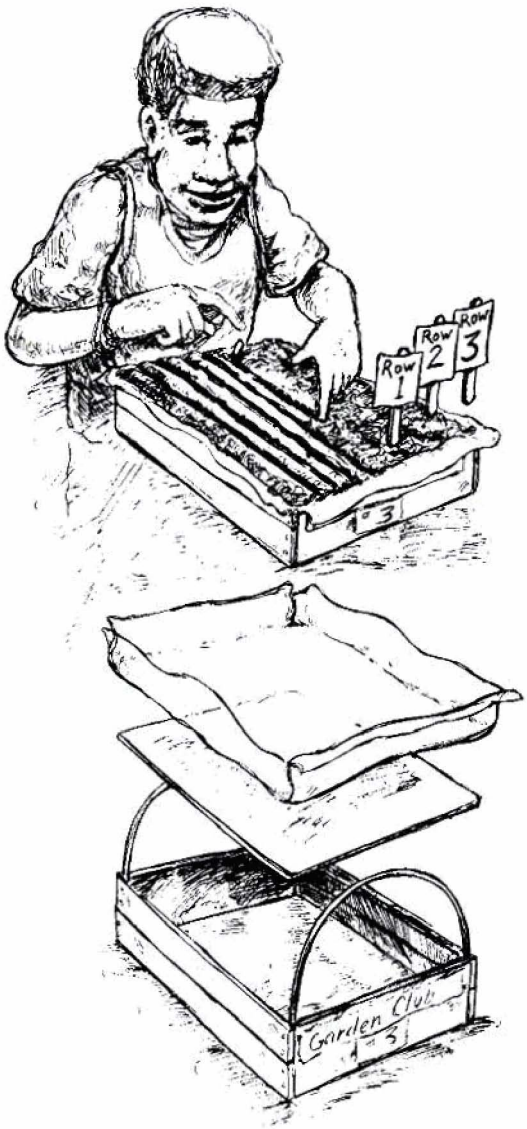
Thumbtacks or strong staples

- Soilless mix or potting soil, available at nurseries and hardware stores
- A large pot or bucket for mixing the soil
- Water

Seeds (Choose lettuce or radish seeds as recommended in the Salad Garden Plant List at the end of this guide.)

- Plant labels—for example, plastic cups or bottles cut into 1/2-inch strips, popsicle sticks, tongue depressors, or commercial labels
- A permanent marker, soft pencil, or grease pencil
- Heavy clear plastic to cover the top of the box, 1 1/2 feet wider and longer than the box





During the Meeting

INTRODUCTION

Do you know that plants can grow in closed jars? Yet people and other animals cannot. This is because only plants can recycle air.

Long ago, when plant scientists traveled to faraway places, they needed a way to bring back plants to Europe where they could study them. One of the best ways to bring back plants was in small glass containers called terrariums. Once enclosed in the glass containers, the plants would stay healthy for a long time without very much attention. Today we will make a garden box that is like the terrariums that plant scientists used.

ACTIVITY

MAKE THE GARDEN BOX

1. Cut the cardboard or other stiff material to fit inside the box.

2. Bend each coat hanger into a half circle. Tape the ends inside the box, at each end of the box.

3. Line the box with heavy plastic and fasten it securely with thumbtacks, staples, or tape. Push the plastic all the way down into the corners of the box, so the weight of the soil will not tear the plastic.

4. Carefully moisten the soil in the bucket. Add water slowly until the soil is slightly moist.

5. Fill the box with 2 to 4 inches of soil.

6. Mark rows 1/4 inch deep with your finger. The rows should be 6 inches apart.

7. Plant seeds one at a time in the row. Plant lettuce seeds 2 inches apart and radish seeds 1/2 inch apart.

8. Cover the seeds with 1/4 inch of soil.

9. Label each row with a plant label.

10. Fasten the clear plastic to one side of the box with tape. Lay the plastic over the box, but leave the other side free so you can check the soil and water the plants.

ACTIVITY

TALK ABOUT PLANTS

Your garden box may not need watering very often. Talk with your club about what plants need to live.

Q. How can the plants live for so long without additional watering?

A. The plants survive for a long time with only a little water because the garden box is closed. The plants give off water vapor (this is called transpiration) and the soil loses water to the air through evaporation. The water vapor condenses on the plastic and then drips back down into the soil where plant roots can use it again. The garden box is a miniature world. In nature, water evaporates from lakes and oceans and trees and other plants transpire. This water condenses in the air to make clouds and then falls as rain.

Q. What do plants need to live, and how are these requirements provided in the garden box?

A. Plants need light, nutrients, water, and air (oxygen) to live. Light comes through the plastic and nutrients are in the soil. We have already discussed how water is recycled in the garden box. Plants also cycle oxygen through pores in their leaves.

ACTIVITY

TAKE CARE OF THE BOX

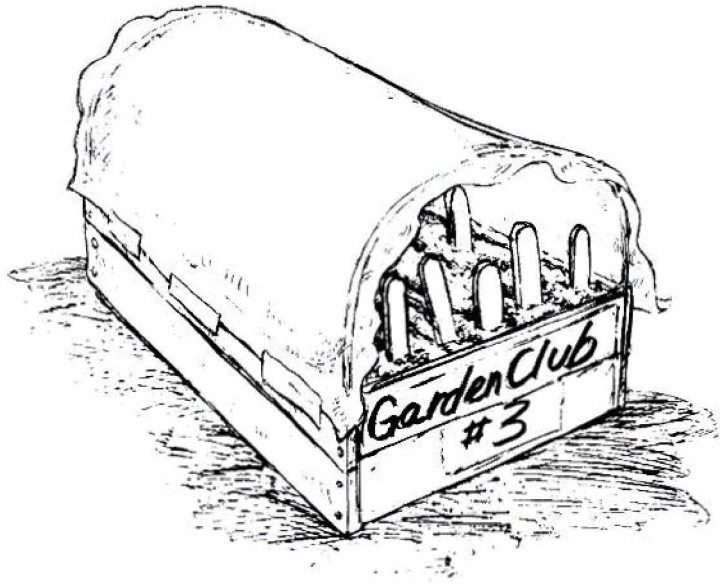
Check the soil every other day to make sure it remains slightly moist. There should be a fine mist of tiny water droplets (condensation) on the plastic, not a heavy fog. If there is too much water, remove the cover for a few hours, and the water will evaporate. If the soil needs watering, water the seeds gently by using a spray bottle or by dripping water from a spoon.

Additional Activity

Make additional garden boxes and experiment with different soils to find out which provide the best growing conditions. For example, try potting soil in one box and a soilless mix in another; or try moist soil in one box and dry soil in another. (Seeds need moisture to germinate and grow.)

PREPARING FOR LESSON 2

Ask members to bring a quart jar and a rubber band that fits around the mouth of the jar. You might supply a 6-inch square piece of cheesecloth for each member.



LESSON 2:

Starting Sprouts

Approximate time the lesson will take: 45 minutes

GOAL

• To help club members understand germination and how seeds grow into plants.

Before the Meeting

Read the lesson carefully and gather supplies. For each member, soak at least 3 dry lima beans in warm water overnight or for at least 5 hours before the group meets. You also can use whole canned lima beans. Photocopy the handout "How to Grow Sprouts" for each member so they know how to care for sprouts. Examine the parts of a lima bean and peanut prior to the lesson.

Supplies

- Soaked dry lima beans or whole canned lima beans, at least 3 per member
- Whole peanuts, at least 4 per member (Whole peanuts in the shell are best.)
- Seeds for sprouting (Seeds are available at grocery stores, health food stores, herb and spice shops, specialty shops, and produce stands. Do not use seeds from seed companies unless they are sold specifically for sprouting, because they may be coated with a fungicide. Some seeds that are commonly sprouted are alfalfa, clover, radish, and garden cress seeds, all usually grown in the light, and mung beans, soybeans, lentils, and fenugreek, all commonly grown in the dark.)
- A tablespoon
- A quart jar for each member (Clean food jars are fine.)
- Water

  A 6-inch square piece of cheesecloth for each jar
- Rubber bands big enough to go around the jar's mouth, one for each jar
- Copies of the handout "How to Grow Sprouts" for each member

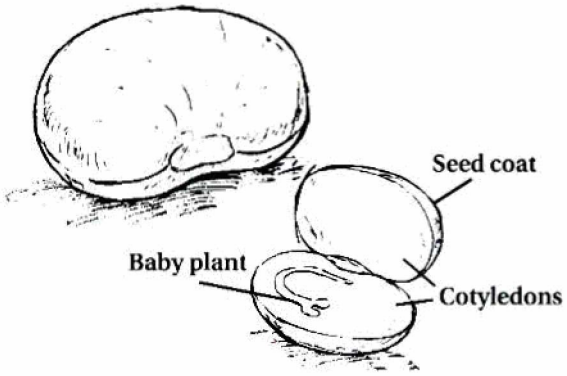
During the Meeting

INTRODUCTION

Today we are going to look at seeds, and then we will start growing them. Next week we will be able to eat the sprouts of the seeds we start growing today. Have you ever thought about seeds? What are they? What do they need to start to grow, or sprout? (This process is called germination.) That's right, water. Do you remember what plants need to grow? (Plants need light, water, air, and nutrients.) Can seeds start growing without light and nutrients? (Seeds can grow for a short while without light or nutrients because they have stored food, but they must take up water and air to germinate).

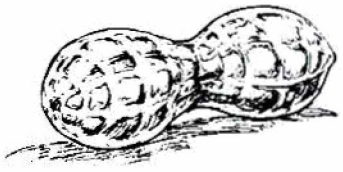
ACTIVITY

IDENTIFY SEED PARTS

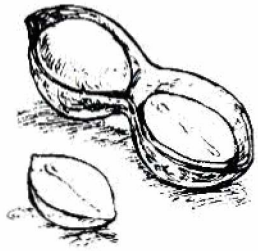


1. Have the members take apart and look at the different parts of the seed. Gently remove the outside seed coat of a soaked lima bean with your fingers. Refer to the illustration to see what the parts are. Carefully separate the limas into their two halves. It may take two or three tries to see the whole baby plant. Many beans are damaged in harvest, or the baby plants may be broken as they are taken apart. (Soaking the bean makes it possible for you to take it apart more easily.)

2. Talk about the seed's parts. What are the parts called? A seed coat covers the seed and protects it from drying out and from being crushed or digested by animals. The baby plant, or embryo, complete with its baby root, will grow into the bean plant. The cotyledons hold stored food, which the baby plant uses to start growing until its leaves can make food for the plant.



3. Look at a peanut's roots and leaves. Remove the shell if you have nuts in the shell. Remove the papery skin and separate the nut into two halves. Can you find the baby leaves and root? This is the baby plant. The peanut holds the stored food for the baby plant. Eat the peanut to get the seed's energy. Can you think of any other seeds we eat? (Nuts, dry beans, corn, peas, and grains, such as wheat, oats, and barley.)



ACTIVITY

START SPROUTS

With the members start to grow the seeds selected for sprouting. Tell them about the care of sprouts and make sure they understand that they will have to rinse the sprouts at least twice daily. Have them practice rinsing and draining the seeds.

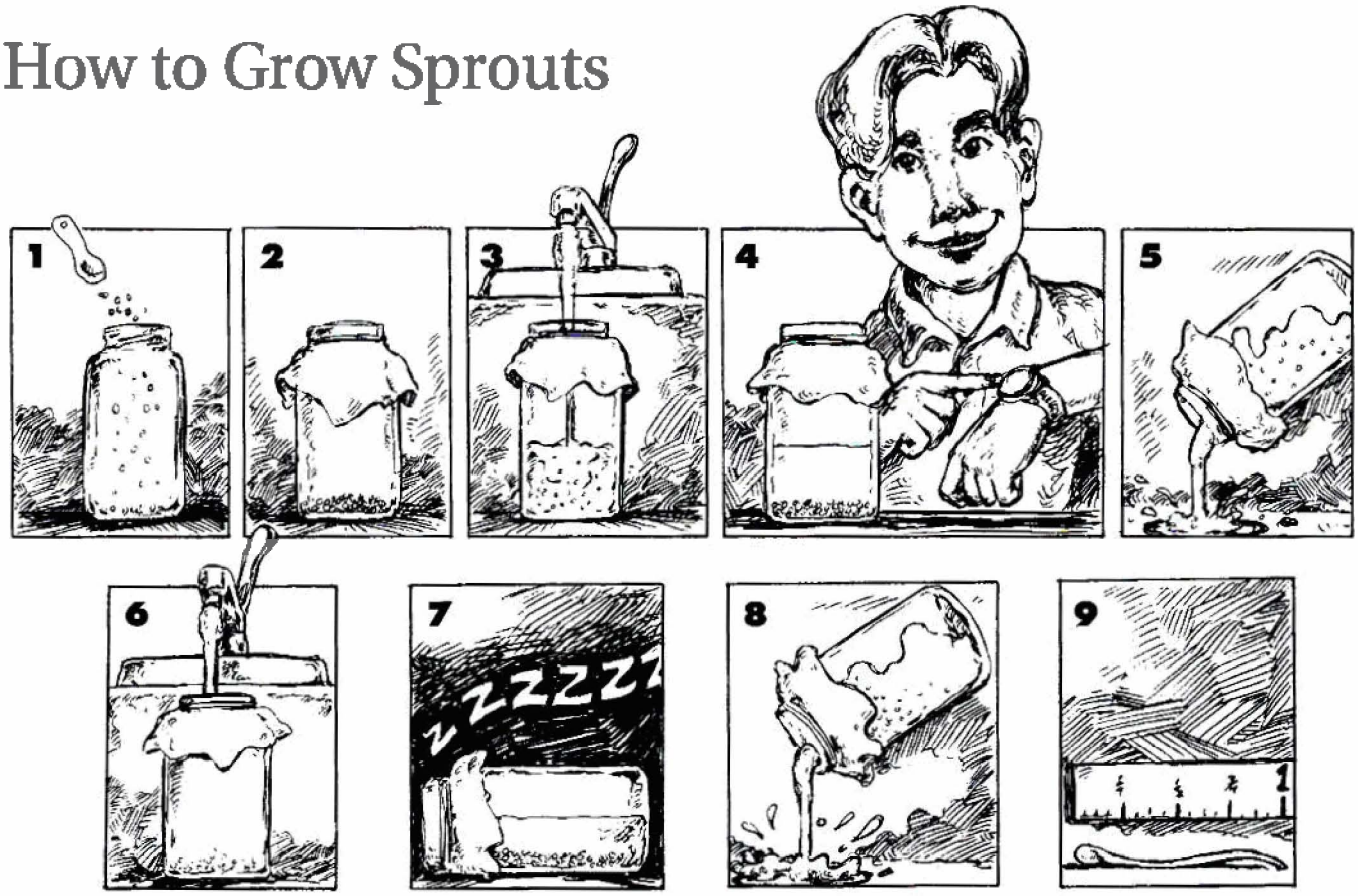
1. Put about 4 tablespoons of seeds in the jar and cover them with water. Let the seeds soak overnight.

2. Cover the mouth of the jar with a piece of the cheesecloth, and fasten the cloth to the jar with a rubber band.

3. Empty the water from the jar, then put the jar in a dark place on its side (so the seeds have more air around them).

4. Rinse the sprouts with water twice a day and return the jar to a dark place. Leave the cheesecloth on the jar (and the sprouts in the jar) when you rinse the sprouts. You need to rinse the sprouts or they will mold. (Rinsing also helps remove the seed coats.)

How to Grow Sprouts



1. Put 4 tablespoons of alfalfa, radish, mung, or other appropriate seeds in a quart jar.

2. Cover the mouth of the jar with a piece of cheesecloth and fasten the cloth to the jar with a rubber band. Leave this cover on until the sprouts are ready.

3. Cover the seeds with water.

4. Let them soak overnight.

5. Drain the water through the cloth.

6. Rinse with more water, and drain again.

7. Place the jar on its side in a dark, warm place.

8. Rinse the sprouts every morning and night.

9. The sprouts are ready to eat when they are about 1 inch long. Rinse them again and refrigerate them until serving.

5. The sprouts are ready to eat when they are about 1 inch long, usually after growing for 4 to 7 days. You will need to refrigerate the sprouts in a plastic bag if they are ready before the next meeting. Remove the hard seed coats and rinse the sprouts before eating them.

6. Give the members the handout so they remember how to grow sprouts.

Additional Activities

1. Try growing sprouts in the light. Soak them the same way, but keep them in the light rather than in a dark place. The sprouts turn green as the young leaves produce chlorophyll. Chlorophyll gives plants a green color and helps them change sunlight into energy.

2. Try growing sprouts in a variety of other conditions and compare the results. For example, have members grow them

- in the refrigerator or freezer (too cold for good germination);
- in a warm place, such as on top of the refrigerator (great for germination);
- without rinsing them after the initial soaking (the sprouts may die from lack of water, or they may mold);
- completely covered with water (the seeds will die due to lack of air); or
- in a tightly covered jar (the sprouts may die due to lack of air).

When you eat the sprouts, compare the results of different growing conditions, and talk about what conditions seeds need to sprout.

3. Lay a moist paper towel at the bottom of a plastic box. Place a pea or bean seed on the moist towel every other day for 8 to 12 days. Keep the towel moist but not wet. After the 12th day, you should be able to show the members the stages of development from seed to seedling.

PREPARING FOR LESSON 3

Remind your club members to refrigerate the sprouts that are ready before the next meeting and to bring the sprouts with them to the next meeting. The sprouts do not need to be rinsed while they are refrigerated.

Eating Sprouts

Approximate time the lesson will take: 45 minutes

GOAL

• To help club members understand that each part of the sprout grows into a part of the adult plant.

Before the Meeting

Ask the club members to bring their sprouts to the meeting. Read the lesson thoroughly and gather supplies.

Supplies

- Sprouts started at the last meeting (They should have been refrigerated in a plastic bag if they were ready to eat before this meeting.)
- Batches of sprouts grown under different conditions, for comparison (optional)
- Magnifying glasses (optional)
- Salad dressing

Plates, forks, and napkins

During the Meeting

INTRODUCTION

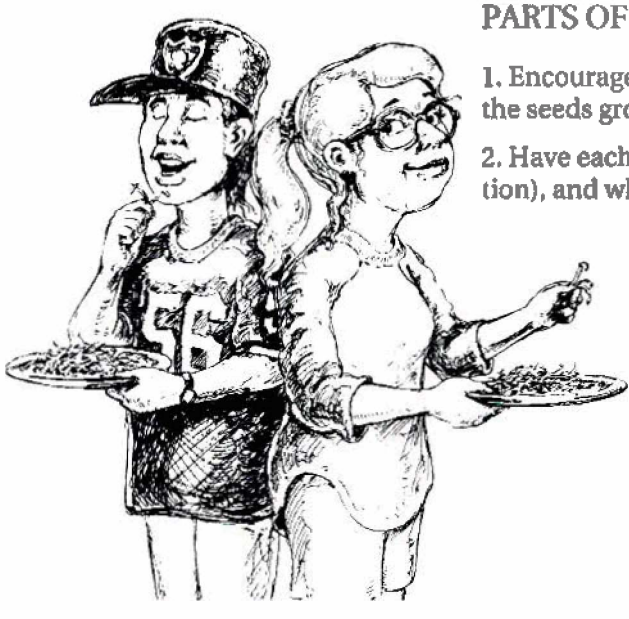
Last week we started sprouts, and today they are big enough to eat. Before we eat them, though, let's look at a sprout. Do you think it looks like a small plant? Or does it look more like a seed?

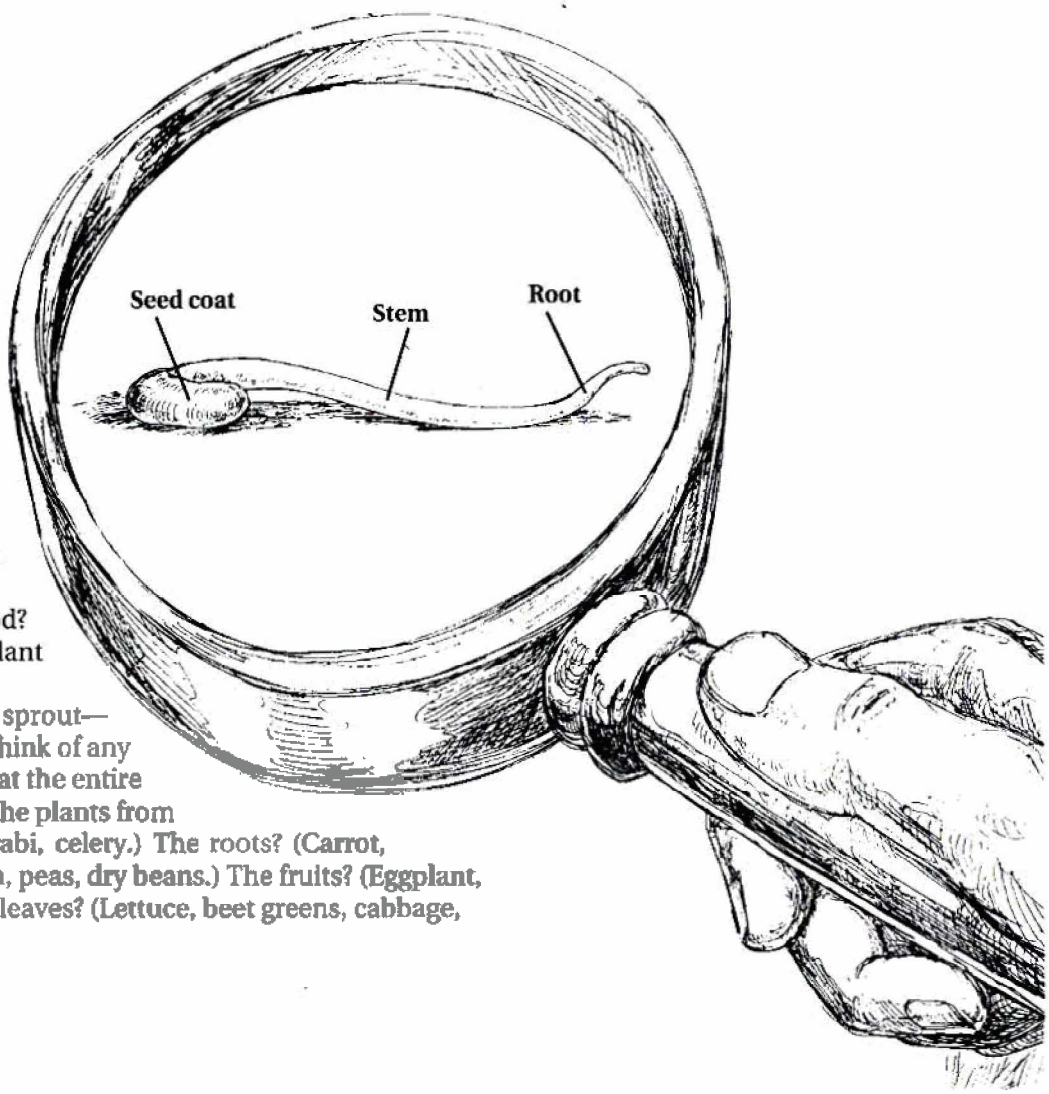
ACTIVITY

PARTS OF A SPROUT

1. Encourage members to discuss their sprout-growing experience. Did all the seeds grow? Did they remember to rinse them?

2. Have each person look at a sprout. What are its parts (refer to the illustration), and what happens to these parts as the plant grows?





3. Talk about the parts of a sprout and what each grows into. What happened to the seed's stored food? (Its stored food was used by the plant to grow.)

You can eat all the parts of a sprout—that is, the entire plant. Can you think of any mature vegetables of which you eat the entire plant? (Beet, turnip.) How about the plants from which you eat the stems? (Kohlrabi, celery.) The roots? (Carrot, parsnip, radish.) The seeds? (Corn, peas, dry beans.) The fruits? (Eggplant, tomato, squash, strawberry.) The leaves? (Lettuce, beet greens, cabbage, spinach.)

ACTIVITY

EAT THE SPROUTS

Remove the seed coats left on the sprouts and eat the sprouts with or without salad dressing. If you sprouted seeds under different conditions, compare the tastes of the raw sprouts grown under different conditions. Is the taste of sprouts grown in light different from that of sprouts grown in the dark? Which do you like better? Why do you think the ones grown in light are green? (Sunlight makes plants turn green. The green pigment, or chlorophyll, captures the sunlight's energy and the plant uses the energy to grow its roots, its stems, its leaves, and its fruit.)

ACTIVITY

USES OF SPROUTS

Talk about how to use sprouts. You can add sprouts, raw or cooked (for just a minute!), to many foods. They are good in salads, omelets, sandwiches, mixed vegetables, and stir-fry dishes.

ACTIVITY

THIN SEEDLINGS FROM THE GARDEN BOX

The lettuce and radish seedlings in the garden box should now be large enough to thin out. Remove every other seedling to give the remaining ones more room to grow. (See Lesson 10: Thinning.)

Starting Seeds

Approximate time the lesson will take: 45 to 60 minutes

GOALS

- **To teach club members how to plant seeds and what plants need to grow.**
- **To grow plants that will be transplanted into gardens later.**

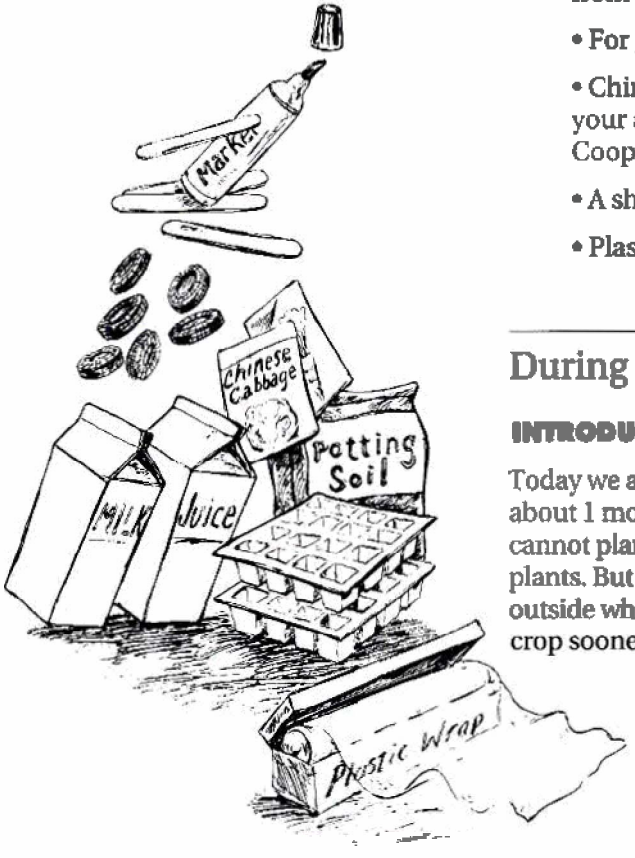
Before the Meeting

Plan to hold this meeting no later than March 15th so the plants will be large enough to plant outdoors in April. Read the lesson and gather supplies.

Supplies

- A large bucket or other container for mixing soil
- Sterile soil or potting mix, available from a nursery, garden center, or hardware store
- Water
- Plant labels—for example, plastic cups or bottles cut into 1/2-inch strips, popsicle sticks, tongue depressors, or commercial labels

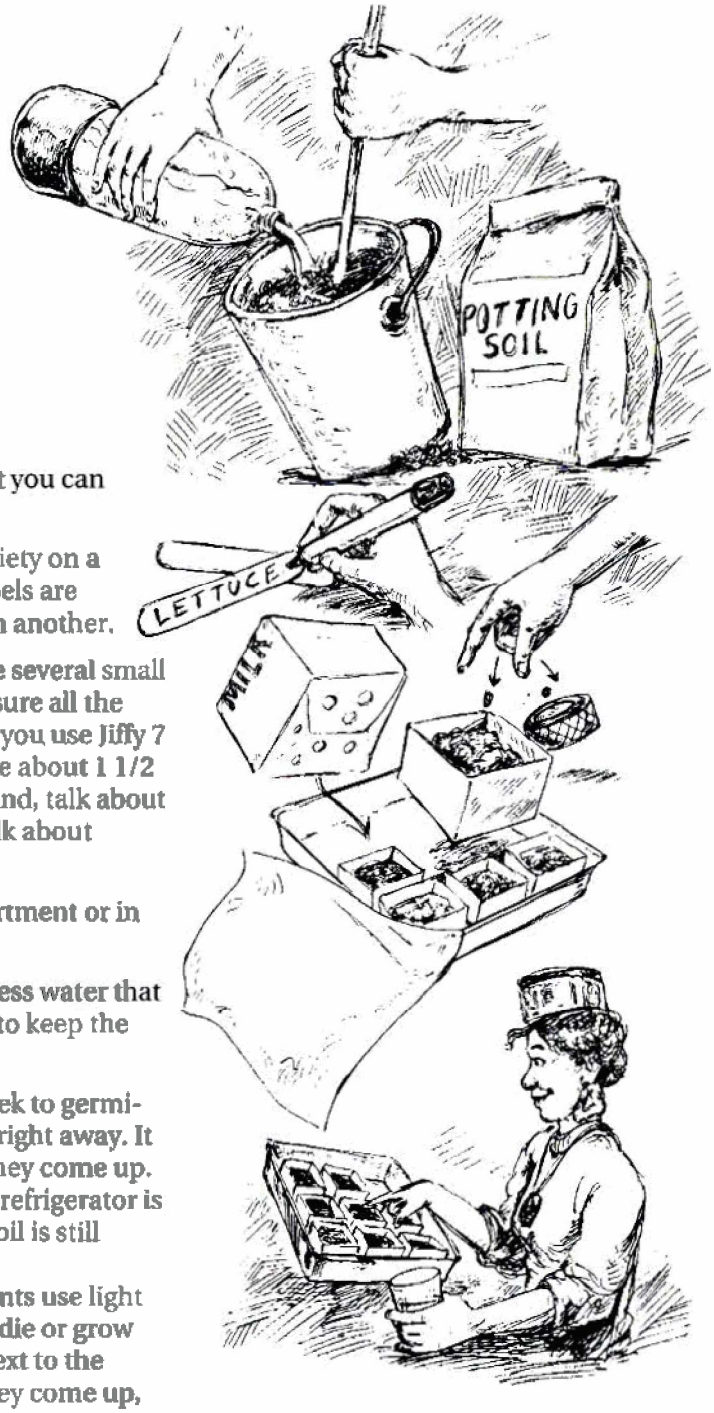
  A permanent marker, soft pencil, or grease pencil
- Containers: cell packs, Jiffy 7 pellets, 2- to 3-inch peat pots (all available at nurseries), or 1-quart milk or juice cartons cut 4 inches from the bottom
- For Jiffy 7 pellets, a bowl for soaking the pellets
- Chinese cabbage and lettuce seeds (Use a variety recommended for your area. Consult the Salad Garden Plant List or ask your Cornell Cooperative Extension agent for advice.)
- A shallow pan with sides, to hold the containers
- Plastic wrap



During the Meeting

INTRODUCTION

Today we are going to plant seeds which we will transplant into the garden in about 1 month. Lettuce needs about 2 months to grow big enough to eat. We cannot plant seeds outside now because the cold weather would kill the young plants. But we can plant seeds indoors and then transplant the seedlings outside when it is warm enough for the plants. This allows us to have a finished crop sooner.



ACTIVITY

PLANT THE SEEDS

1. Moisten the soil in the bucket, but do not make it so wet that you can squeeze water from it. Add water and mix.

2. Prepare the labels. Write the date, the vegetable, and the variety on a popsicle stick, a strip of plastic cup, or a commercial label. Labels are important because they make it easier to tell one seedling from another.

3. Prepare the containers. If you use juice or milk cartons, poke several small holes in the bottom. The holes let out any excess water. Make sure all the containers are clean. Fill each compartment with moist soil. If you use Jiffy 7 pellets, soak them in lukewarm water until they expand and are about 1 1/2 inches tall. This takes about 10 minutes. While the pellets expand, talk about what conditions plants need to grow. (See the next activity, Talk about Plants.)

4. Plant 2 or 3 seeds about 1/4 to 1/2 inch deep in each compartment or in the "bull's eye" end of the Jiffy 7 pellet. Label each container.

5. Put the planted containers in a shallow pan to catch any excess water that drips through the containers. Cover the pan with plastic wrap to keep the seeds moist and warm.

6. Discuss care of the seedlings. The seeds will take about a week to germinate, or come up, so do not worry when you do not see plants right away. It is especially important to take good care of the plants before they come up. Put them in a warm place (about 70° to 75° F). The top of your refrigerator is usually a good site. Check the plants every day to be sure the soil is still moist. Carefully water the soil if it has dried out.

After the seedlings germinate, they need a lot of light. Plants use light to produce energy, which they use to grow. Without light they die or grow very spindly. Remove the plastic wrap and put the seedlings next to the sunniest window that you have. Plants still need water after they come up, so check them every day.

NOTE: GROW LIGHTS

Do you have an extra fluorescent lamp? Plants grow very well when they are placed about 8 inches from a fluorescent light source. If you can't adjust the height of the lamp, move the plants close to the light by putting the containers on blocks or bricks. As the plants grow, remove the blocks so the distance between the plants and the light is always 8 inches. Leave the lights on 12 hours per day.

7. When the plants are about 1 1/2 inches high, choose the biggest plant in every section and gently pull or cut out the others. This is called thinning, and it is necessary for the plants to grow well. Thinning assures that each plant is not crowded and has enough room to grow.

ACTIVITY

TALK ABOUT PLANTS

Q. What do plants need to grow?

A. Plants need air, light, water, and nutrients. Your plants get some nutrients from the soil you used and they get some from fertilizer. What do people need to grow? Do plants and people need different things to grow?

Q. Why plant several seeds if you are going to pull out all but one?

A. Some seeds might not germinate. Others might produce very slow-growing or weak plants. Planting several seeds lets you choose the strongest, healthiest plant.

Q. Why should you use sterile soil?

A. You need to use sterile soil because young plants are very susceptible to diseases, and soil from outdoors sometimes has fungus spores and weed seeds in it. If the soil does have a fungus, the whole tray of plants will wilt, fall over, and die (this is called "damping off").

Q. Why should you put drainage holes in the milk or juice cartons?

A. The drainage holes let extra water out. Plant roots can suffocate if they are drowned in water and cannot get enough air.

Additional Activities

1. Experiment with different soils to see how they affect germination. For example, try sand, garden soil, potting soil, soil from a vacant lot, or peat moss. Prepare the soil, plant the seeds, and care for the seeds as described previously.

2. Do not thin the seedlings in two or three of the containers and see how the plants grow. Do they grow better or worse than the plants that have been thinned?

LESSON 5:

Planning the Garden

Approximate time the lesson will take: 45 to 60 minutes

GOAL

• To teach club members how to plan a garden that can be harvested by June 15.

Before the Meeting

Read the lesson completely and gather supplies.

Measure the boundaries of your proposed garden. Draw your garden to scale on the handout "My 4–H Garden Plan" or on graph paper. Choose a scale that makes your garden fit the paper. For example, if your garden is 15 feet by 10 feet and your scale is 1/2 inch equals 1 foot, then the diagram of your garden (7 1/2 inches by 5 inches) will fit on a regular 8 1/2- by 11-inch sheet of paper.

If the garden is more than 4 feet wide, you will need a path in the garden so that no one has to stand on the plants to plant, weed, or harvest. Decide where the path will be in the garden.

Supplies

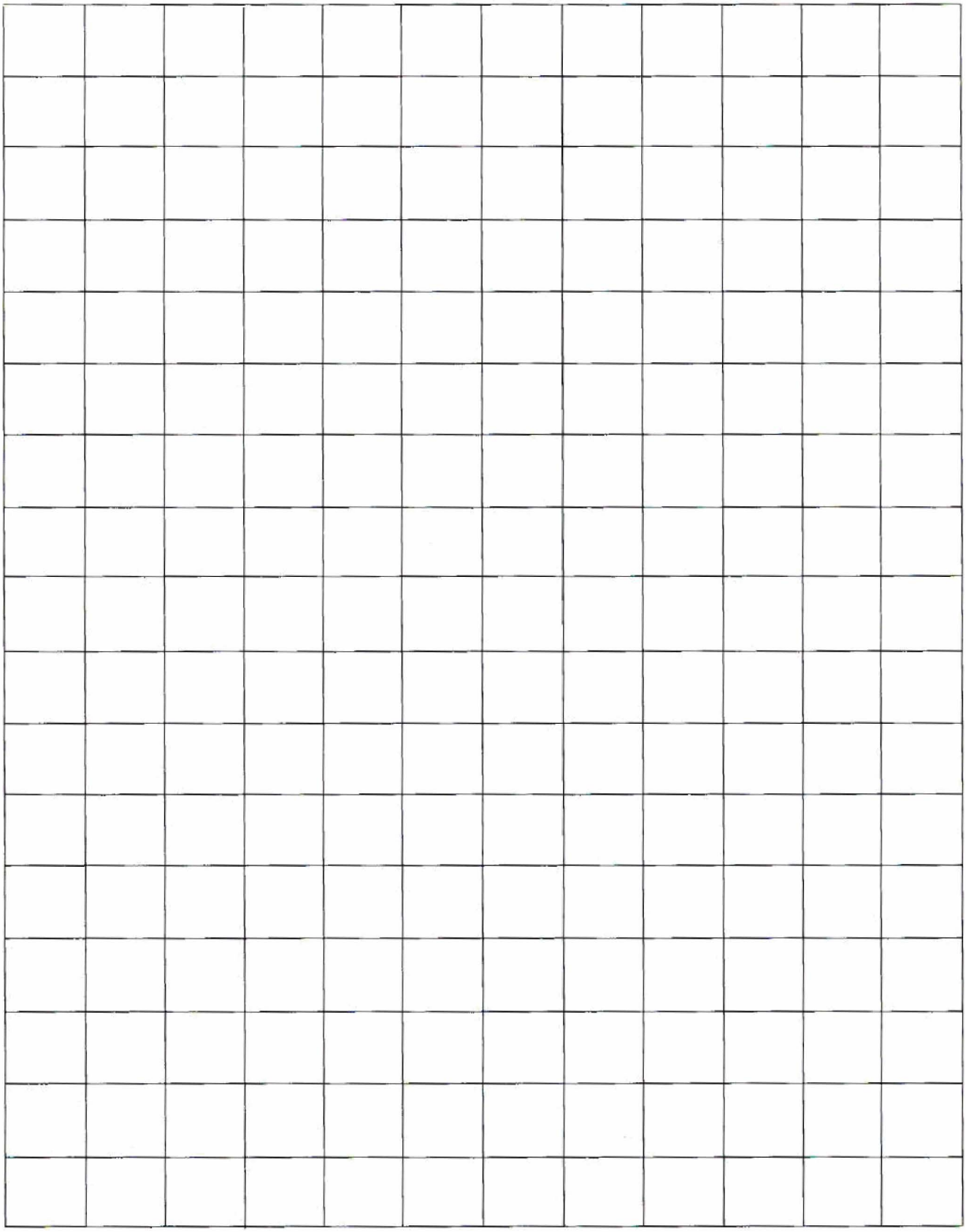
- Rulers
- Copies of the handout "My 4-H Garden Plan" for each member
- Pencils
- The Salad Garden Plant List (at the end of this guide)
- The seeds started at the last meeting

During the Meeting

INTRODUCTION

Today we will plan our garden. We need to decide what kinds of vegetables we want to grow and where we want to grow them.

My 4-H Garden Plan



ACTIVITY

PLAN THE GARDEN

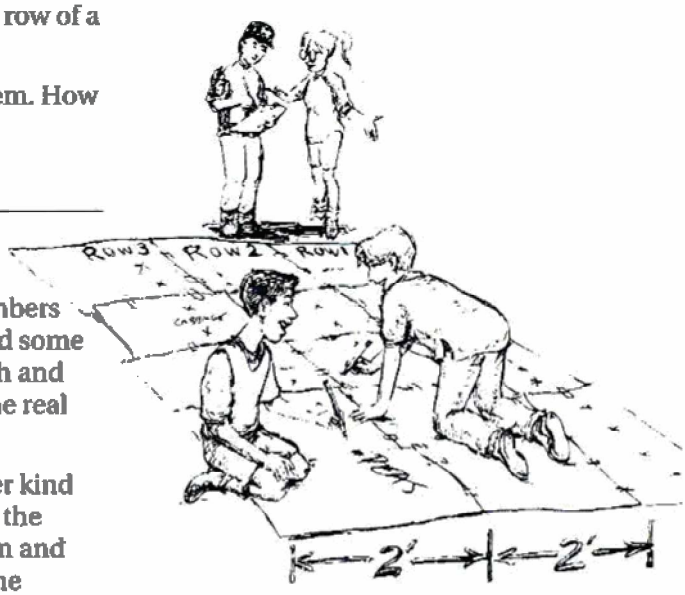
1. Have the members draw the garden to scale on the handout "My 4-H Garden Plan." Draw a path if you need one.

2. Draw rows for the vegetables. Leave 2 feet between each row so the gardeners can work in the garden easily.

3. Choose the vegetables that the club wants to grow. Select vegetables from the Salad Garden Plant List only. Other vegetables probably would not be ready to harvest by June 15. Remember to include the lettuce or Chinese cabbage you started at the last meeting.

4. Mark where you want to plant the vegetables on the garden plan. Use the sample plan illustrated here as a guide. Plan to grow more than one row of a vegetable if your group likes it.

5. Check the seeds you started at the last meeting and talk about them. How big have they grown? How much care do they need?



Additional Activities

1. Make a salad of the vegetables the club wants to plant so the members can see and taste the vegetables they will grow. You may want to add some of the plants from the garden box to the salad. Have the youths wash and prepare the vegetables and serve them. Ask them to imagine how the real garden salad will taste.

2. Make a "paper garden." Using newsprint, newspaper, or any other kind of large paper, tape together enough pieces so the paper is as big as the actual garden. Use a marker to draw the rows and path of the garden and label the rows with the vegetables you decide to grow. (Make sure the marker does not leak through to the floor.) This is an excellent opportunity to get the members used to staying on the path and only stepping between the rows. This activity takes quite a bit of time and space to complete. You might want to save the paper garden and practice planting seeds indoors on paper so the club members will understand what to do when they go outside to plant in the real garden.

PREPARING FOR LESSON 6
Ask members to wear old clothes and shoes for the next meeting because they will get dirty. They should bring gloves if possible.

LESSON 6:

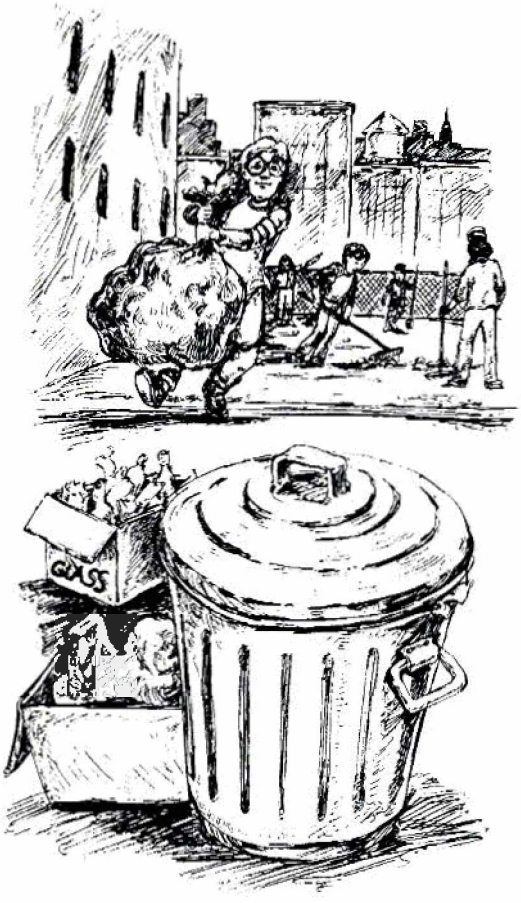
Cleaning the Site

Approximate time the lesson will take: 15 to 60 minutes, depending on the size and condition of the garden

GOAL

• To teach club members how to prepare a site for gardening.

Important: If your plot has been used for gardening several times before, it may not need much cleanup. If it has many plants or weeds or trash in it, however, it needs to be cleaned well.



Before the Meeting

Read the lesson and gather supplies. Make sure you can use the site that you have chosen. If the land is not yours, find out who the owner is and be sure you receive his or her permission, even if you have used the site before.

Supplies

- Gloves for each person, if possible
- Plastic garbage bags
- 4 stakes
- Measuring tape
- A hammer, a large rock, or a brick to pound in the stakes
- Strong string or lightweight rope
- 2 trowels

During the Meeting

INTRODUCTION

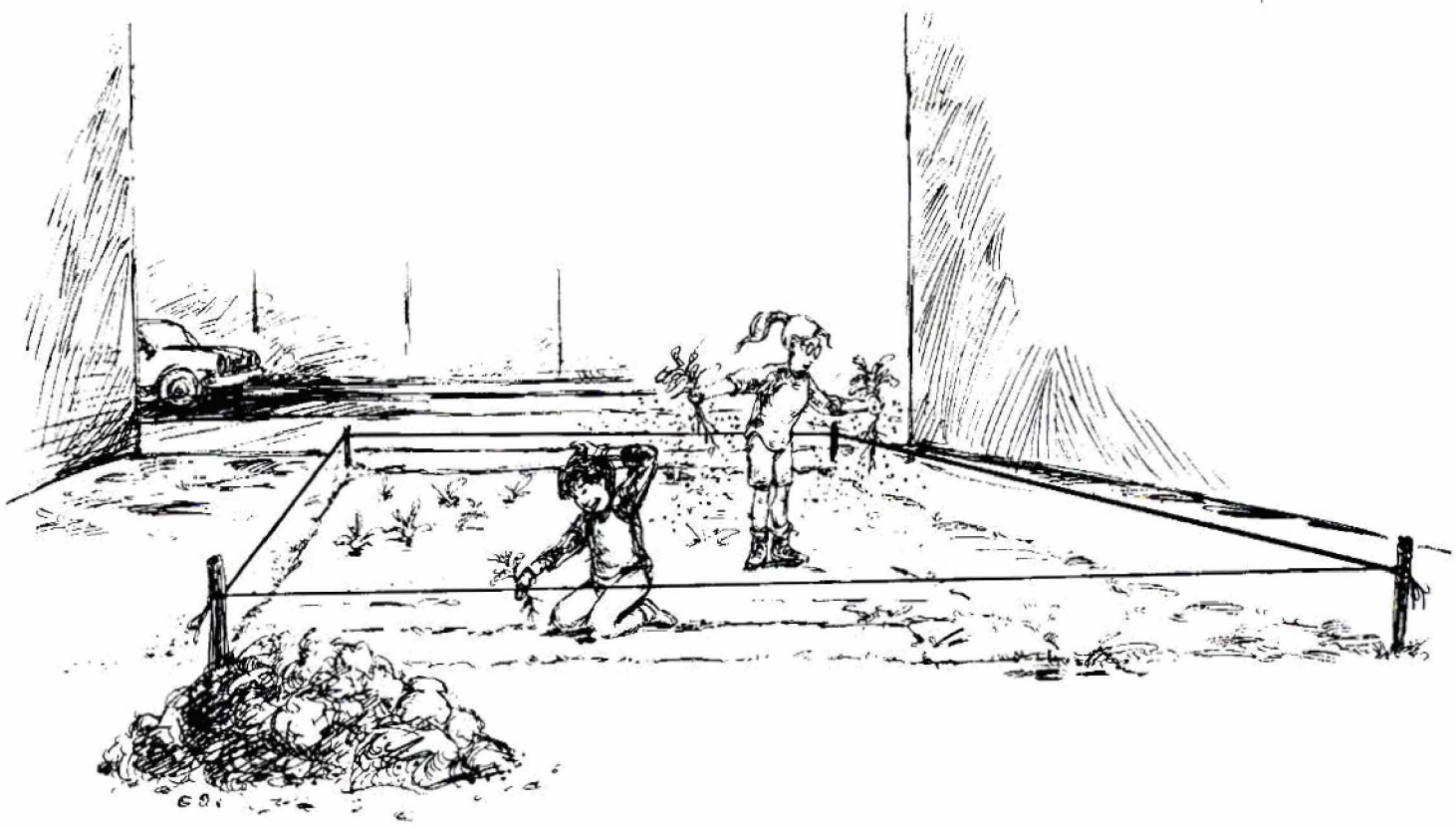
Today we are going to get the garden ready to plant. Plants do not grow well in soil littered with bricks, glass, metal, and plastic, so we need to remove these foreign objects. We also will be taking out weeds and anything else that might keep plants from growing well.

ACTIVITY

CLEAN UP THE SITE

1. Remove all rocks, bricks, metal, glass, wood, plastic, paper, and other trash from the site. Wear gloves to pick up trash, especially sharp objects such as glass. Put all glass, plastic, metal, and paper in plastic garbage bags and put them in a trash can. Flat rocks and bricks can be used to make paths and borders, so save them in a pile.

2. Stake out the garden boundaries by hammering stakes in each corner and tying a string around them. The area inside is the garden.



3. Remove all the plants in the garden, including their roots. Use a trowel to dig plants that you cannot pull out. In the garden, shake off as much soil as possible from the roots. If you have more space than you plan to use, pile weeds in an out-of-the-way corner. They will decompose and form a rich compost, which can be added to the soil later.

Additional Activities

1. Care for the seedlings the group started 2 weeks ago. They should have emerged by now. Remember to pinch or cut out all but one seedling per container.

2. Hold a trash contest. Divide youths into groups of at least two persons and assign each group to clean up a part of the garden. See how many full bags of trash each group can collect in a given amount of time.

3. Take a soil sample and test it.

NOTE: SOIL TESTING

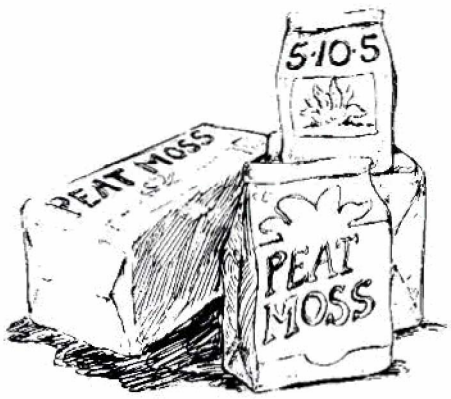
Not all soils are the same. Soil pH is a measure of acidity and tells you how acid your soil is. Most vegetable plants grow well in a slightly acid soil. To take a soil sample for testing, use a trowel to dig down several inches in three or four places in your garden; collect two spoonfuls of soil from each place and mix them together. It's important to collect soil from several inches down, not from the surface. Dry the mixture in the sun. If you have a soil test kit, follow the directions on the kit. Test the soil at least twice for accurate results. If you do not have a soil test kit, see if a nursery could test your sample, or give a soil sample to your Cornell Cooperative Extension agent in a clean plastic bag or cup with your name and address written clearly on it.

Breaking Ground

Approximate time the lesson will take: 1 1/4 to 1 3/4 hours, depending on the size of the garden

GOAL

•To teach club members how to use tools safely, how and when to test soil for wetness, and how to prepare the ground for plants.



Before the Meeting

Read through the lesson and gather supplies. Familiarize yourself with the garden tools required and learn how to use them safely.

If you have not already done so, multiply the length of the garden (in feet) by its width (in feet) to find the total garden area (square feet). If your garden is not a rectangle, multiply its longest length by its widest width. For each 100 square feet of garden, have on hand 2 cubic feet of peat moss, or a wheelbarrow load of compost, and 4 pounds of 5-10-5 fertilizer.

Make sure the soil in the garden is not too wet to work. Walking in the garden will compact the soil, and plants will have a hard time growing. To test for wetness, squeeze a handful of soil. If it stays in a lump or if water drips out, the soil is too wet to work. If the soil breaks into several pieces, you can work in the garden. You should test the soil for wetness every time you plan to work in the garden.

Supplies

- 3 to 5 spading shovels or forks
- 1 to 2 rakes
- 1 to 2 hoes
- 1 to 2 cultivators
- 1 to 2 trowels
- Gloves (optional)
- Peat moss, available at a garden supply store, or compost
- 5-10-5 fertilizer, available at a garden supply store
- Plastic garbage bags

During the Meeting

INTRODUCTION

Today we are going to make it easy for plants to grow in the soil in our garden. Plants need three things from the ground. Can you tell me what they are? They need water, nutrients, and a soft place to grow. We will spread fertilizer on the soil to add nutrients. We will add peat moss or compost to make the soil soft, and we also will spade the ground to mix in the things that we have added. Why do you suppose plants need a soft place to grow? Think about a baby carrot root, which is smaller than a pencil. As it grows, it might hit a brick or a big clump of hard soil. It cannot grow through the hard soil or brick, so when you pull the carrot out it will be twisted and bent instead of straight.

ACTIVITY

TALK ABOUT USING AND CARING FOR GARDEN TOOLS

Imagine if you had to break soil apart with just your hands. It would be difficult! Tools make gardening much easier. However, you need to be very careful with garden tools. They can be dangerous if not used and stored properly.

Spading shovels and **spading forks** are used to break apart the ground when you are getting ready to plant. Use them both in the same way: place the point of the shovel or tines of the fork in the ground; step on the shank until the tool sinks in more than halfway up the blade; and push the handle down towards the ground, turning the soil over.

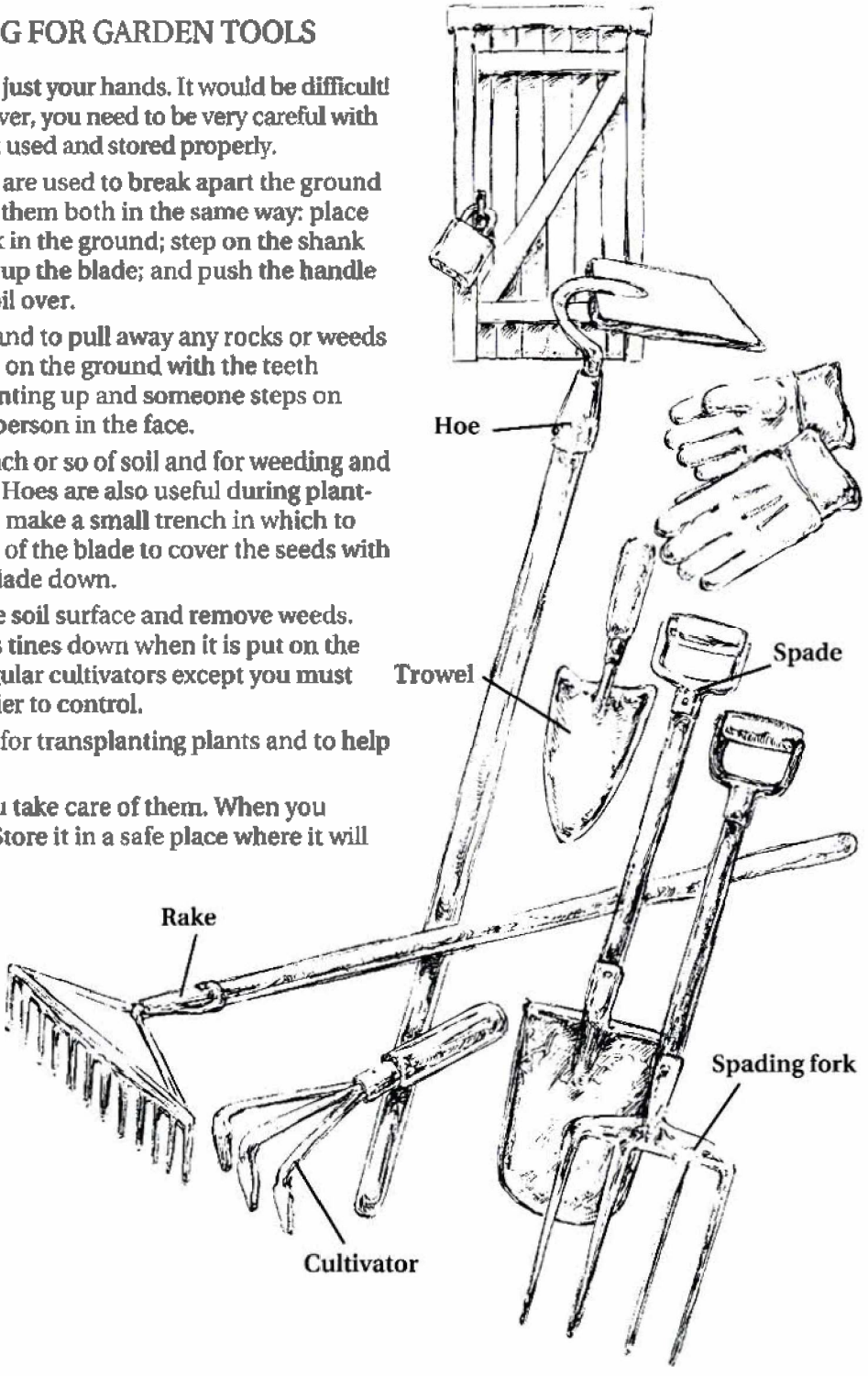
Rakes are used to level the ground and to pull away any rocks or weeds lying on top of the soil. Always put a rake on the ground with the teeth pointing down. If you leave the teeth pointing up and someone steps on them, the handle will flip up and hit the person in the face.

Hoes are used to chop up the top inch or so of soil and for weeding and breaking up the soil just before planting. Hoes are also useful during planting. You can use the point of the blade to make a small trench in which to plant seeds, and you can use the flat part of the blade to cover the seeds with soil. Place hoes on the ground with the blade down.

Cultivators are used to break up the soil surface and remove weeds. Like hoes and rakes, keep the cultivator's tines down when it is put on the ground. Hand cultivators are just like regular cultivators except you must bend down to use them and they are easier to control.

Trowels are used to dig small holes for transplanting plants and to help harvest root and stem crops.

Your tools will last a long time if you take care of them. When you finish using a tool, wipe the soil from it. Store it in a safe place where it will not get wet.



ACTIVITY

BREAK GROUND

1. Teach the club members how to test the garden soil for wetness, following the procedure described previously in the section "Before the Meeting." Explain to the club members that they should test the soil in their garden every time they plan to walk on it. If the soil is too wet, walking in the garden will pack the soil down and roots will not be able to grow well.

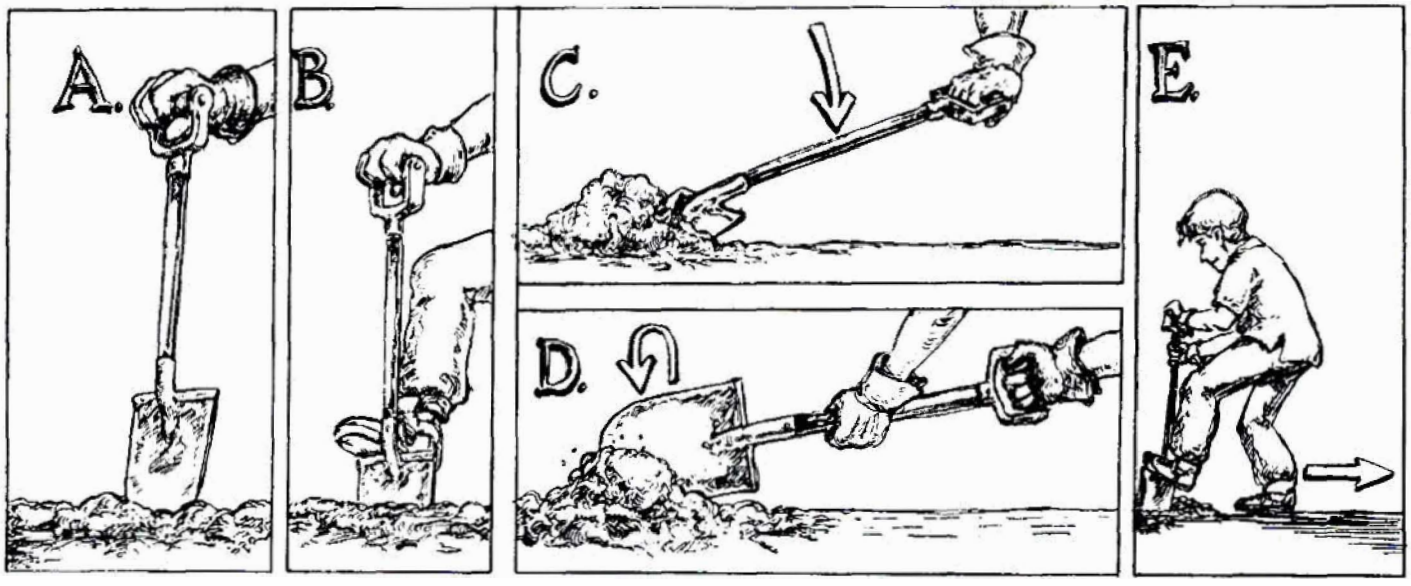
2. With the club members, figure out how much fertilizer and peat moss you need. Allow 2 cubic feet of peat moss and 4 pounds of fertilizer for every 100 square feet of garden.

FOR EXAMPLE:
(10 feet wide) x (15 feet long) = 150 square feet of garden
You need:
(1.5 x 2 cubic feet) = 3 cubic feet of peat moss
(1.5 x 4 pounds) = 6 pounds of fertilizer

3. Spread half the peat moss and fertilizer evenly over the garden, so every part of the soil gets an equal share. A 1-quart jar holds 2 pounds of fertilizer.

4. Demonstrate how to spade, emphasizing the careful placement of the spade in the ground (A). Stabbing the spade into the ground can lead to accidents. Push the blade of the spade or the fork into the ground about 8 inches (B) and turn the whole lump of earth over so the bottom part is exposed (C and D). Do not try to supervise more than five people using spading shovels or forks at one time.

5. Turn the soil over with spading shovels or forks. Starting at one side of the garden, space the club members apart evenly. Instruct them to turn the ground over and then move backwards, so they do not step on the ground they have just spaded (E). If there are more youths than spading shovels or forks, have the members take turns. Members who are not spading should stand outside the garden so the freshly turned soil is not trampled.



NOTE: TRASH LOOKOUT
You might want to appoint one person as a trash lookout. When the spaders turn over bricks, glass, plastic, metal, or any other trash, the lookout should put it in a garbage bag. Make sure the lookout stays away from the spading tools and does not walk on the soil that has just been turned.

5. After the entire garden is turned over, spread the other half of fertilizer and peat moss evenly over the garden.

6. Rake the soil to break up clods of soil and to mix in the fertilizer and peat moss. Have the members stand around the edges of the garden when raking. Pass one or two rakes from person to person so everyone has a chance to smooth the soil. Remove any stones, glass, metal, plastic, or other foreign objects that raking might uncover, and put the trash in a plastic garbage bag. The garden surface should be loose but level and free of rocks and large clods of soil. The garden is now ready to plant and should not be walked on.

ACTIVITY

TALK ABOUT PREPARING THE GROUND

Q. Why do you have to work the soil so much?

A. When you loosen the soil by turning it over, you incorporate air and evenly mix the nutrients that plants need to grow. Also, a loose soil allows water and air to move freely. Plants grow best in soil that is loose because roots need air, nutrients, water, and a soft place to grow.

Q. What do the numbers on the fertilizer bag mean?

A. The numbers stand for the percentages of nitrogen, phosphorus, and potash in the fertilizer. A 5-10-5 fertilizer is 5 percent nitrogen, 10 percent phosphorus, and 5 percent potassium. Nitrogen helps leaves and stems grow, phosphorus helps flowers, roots, and fruits grow, and potassium helps plants stay healthy.

Planting

Approximate time the lesson will take: 1 to 1 ½ hours, depending on the size of the garden

GOAL

•To teach club members how to plant seeds and transplants.

Before the Meeting

Read the lesson and gather supplies. It is important in the Long Island, New York City, and lower Hudson areas that you plant the garden about April 15 so the vegetables will be ready to harvest about June 15. In upstate New York, plant by April 30 for a late June harvest. Try to plant transplants in the evening or on a cloudy day so the seedlings do not die in the sun's heat.

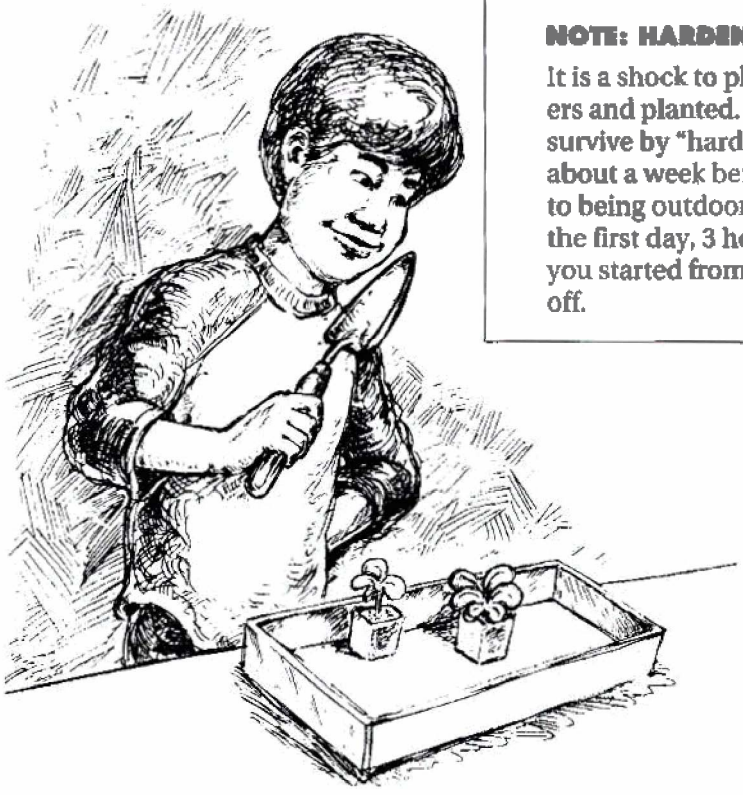
Transplants are young plants that you can set in the ground instead of seeds. They will produce a crop earlier than seeds planted at the same time. Choose plants that are bushy rather than tall, because tall, spindly, weak stems break easily. Remember to choose recommended varieties of vegetables that grow well in your area, such as those on the Salad Garden Plant List. Your Cornell Cooperative Extension agent can help you choose other good varieties.

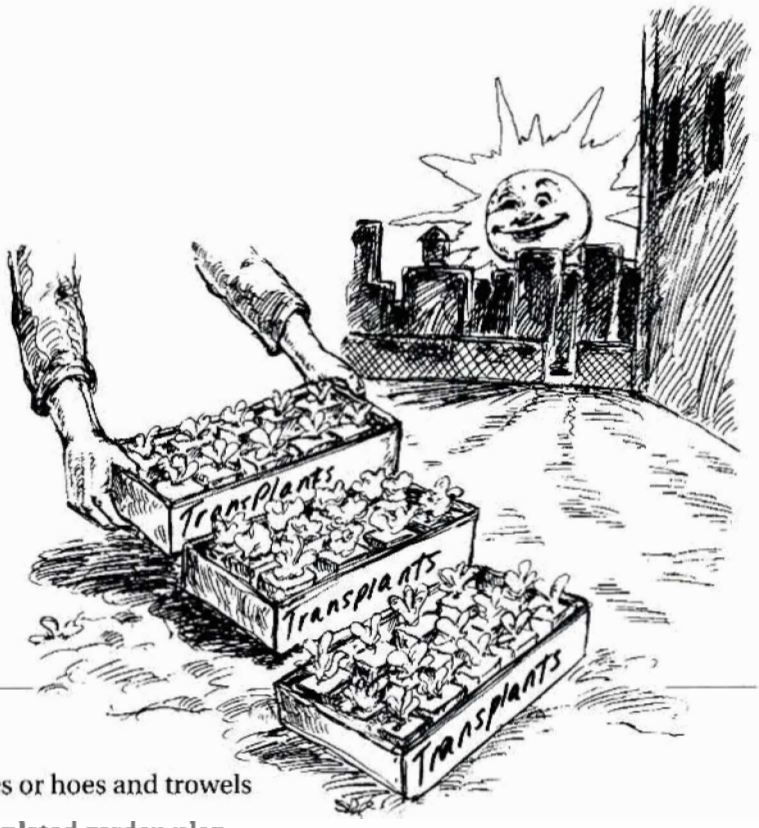
Old seeds do not always grow. Ask your Cornell Cooperative Extension agent how to conduct a germination test on old seeds. Some seeds are treated with fungicides, so handle seeds (especially those covered with a pink powder) carefully and be sure to wash your hands afterwards.

More information on planting distances can be found in the 4-H bulletin *Your 4-H Vegetable Garden Project: A Planting Guide* (H-10-4).

NOTE: HARDEN OFF TRANSPLANTS

It is a shock to plants when they are removed from their containers and planted. You can reduce shock and help the plants survive by "hardening them off." To harden off plants, buy them about a week before you plant and gradually let the plants adjust to being outdoors. Put them in direct sunlight for about 2 hours the first day, 3 hours the second day, and so on. The plants that you started from seed also will grow better if you harden them off.





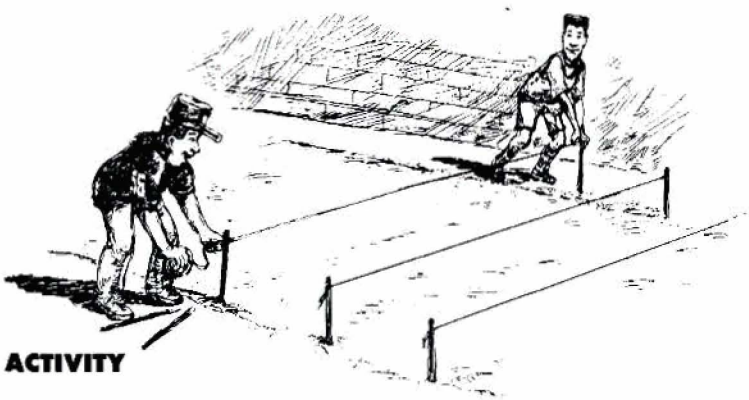
Supplies

- Spades or hoes and trowels
- A completed garden plan
- Row markers—for example, small sticks about 6 to 18 inches tall
- String
- Seeds
- The Salad Garden Plant List
- Measuring tape
- The plants started indoors from seeds (Lesson 4)
- Labels
- A permanent marker or grease pencil
- Starter solution—water-soluble fertilizer available at nurseries—or water (If you are using starter solution, mix it according to the directions on the package.)
- A measuring cup or an 8-ounce can

During the Meeting

INTRODUCTION

Today we are going to plant our garden. We need to be careful to plant correctly, or not all our plants will grow. Seeds will come up only if we follow the package directions carefully. Transplants need gentle treatment and a lot of care. What have we done already to help the plants grow? We have planned the garden, started some of our own seeds, picked up trash, turned over the soil, and fertilized.



ACTIVITY

PREPARE THE GROUND FOR PLANTING

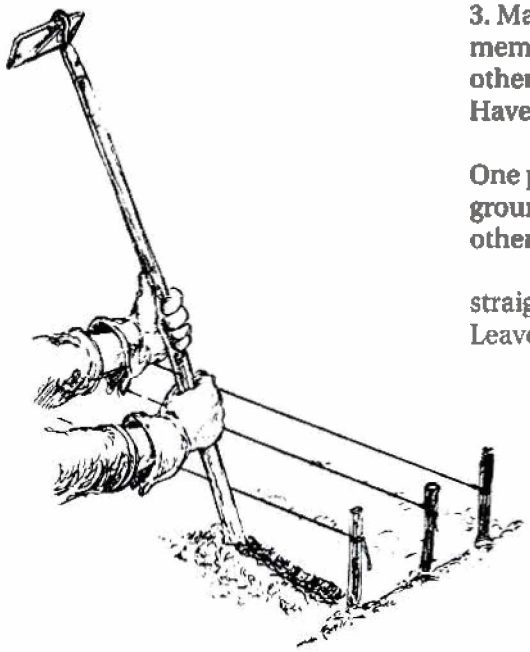
1. Loosen the soil by spading or hoeing your garden just before planting. Seeds and transplants grow better in soft, weed-free soil. The soil will be easy to work because you have already prepared it. Be sure the soil is loose, level, and weed-free.

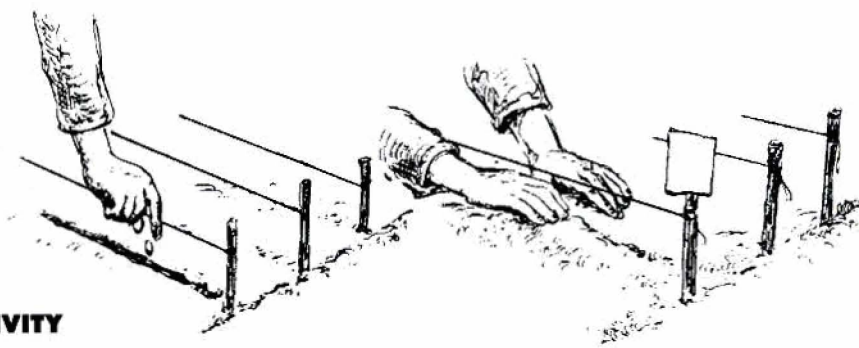
2. Check your garden plan and supplies. Make sure your plan fits your garden space and that you have everything you need to plant your garden.

3. Mark out straight rows according to your garden plan. Divide the club members into pairs. Have one partner stand across the garden from the other and outside the garden or on the path, never on the soil to be planted. Have each pair work together to mark out rows in the following way:

Each partner pushes a marker halfway into the soil at the end of a row. One partner ties a string on his or her marker 3 or 4 inches above the ground. That partner then hands or tosses the untied end of the string to the other partner, who ties it to his or her marker.

The string marks the row and makes it easy to plant the seeds in a straight line. Later, it will be easy to find the plants when you weed the rows. Leave the string in place until the plants touch it.





ACTIVITY

PLANT THE SEEDS

1. Make a shallow trench with the hoe handle or the point of the hoe blade.

2. Plant seeds in the trench one at a time. Look at the seed package or the Salad Garden Plant List to determine how far apart to plant them. It is important to follow those directions so the plants grow well.

3. Cover the seeds with 1/4 inch of soil using your hand or the flat of the hoe blade. Do not cover the seeds with too much soil, or they may have trouble growing.

4. Label the row with the kind of vegetable, the variety, and the date planted.

5. Leave the row markers and the string in place to show where the plants will grow.

ACTIVITY

PLANT THE TRANSPLANTS

1. Mark the places in the row where each plant will be. Use the Salad Garden Plant List to determine how far apart to space the transplants.

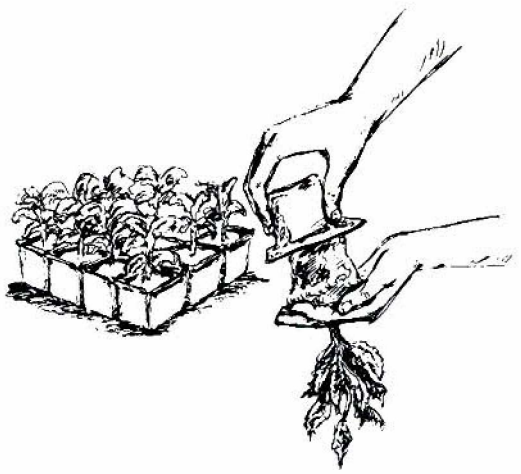
2. For each plant, use a trowel to dig a hole that is 1 inch deeper and wider than the plant's roots. Dig the sides of the hole straight down.

3. Remove the plant from the cell pack by turning the cell pack over and pushing from the bottom while supporting the plant at its base.

4. Carefully hold the plant in place with one hand and fill in the soil around the plant with your other hand. Gently pack soft soil around the plant's roots.

5. Water the plant with 1 cup starter solution. Add a little more soil around the plant if it is needed.

6. Label the row with the kind of vegetable, the variety, and the date planted.



Additional Activities

1. Keep a garden log, or a record of each vegetable grown. Record an estimate of how many seeds were planted. Make note of when the first plants come up. Count how many plants come up altogether and record the number. Count how many plants are thinned out and how many grow to produce vegetables. Record the results.

2. Plant some seeds about 1 inch deep and some on the soil surface. Mark their depths on the plant labels. What difference does planting depth make in how plants grow?

LESSON 9:

Weeding

Approximate time the lesson will take: 45 minutes, depending on the size of the garden

GOAL

- **To teach club members how to identify weeds and how to get rid of them.**

Before the Meeting

Read the lesson and gather supplies. Try to identify which plants in the garden are weeds and which are vegetable plants. If possible, try to identify the weeds that you find by name. Your Cornell Cooperative Extension agent may be able to visit your garden and help you identify them.

You need to weed the garden once a week. The more frequently it is weeded, the easier it is to weed. It is easier to remove weeds when they are small because large plants are firmly rooted in the soil. It is also easier to weed when the soil is a little damp. But do not weed when the soil is very wet, because you will pack down the soil when you walk on it and make it harder for your plants to grow.

Supplies

- Hoes and cultivators

During the Meeting

INTRODUCTION

Why weed at all?

Imagine that you are on a busy street crowded with people (a weedy garden), and someone is in a third floor window throwing food onto the street. This is the only way you and everyone else on the street can get food, so you will really have to fight to get a share of it. Now imagine that you are the only person on the street (a weed-free garden), and just as much food is being thrown from the window. Think how much more food you will get and how much happier you will be.

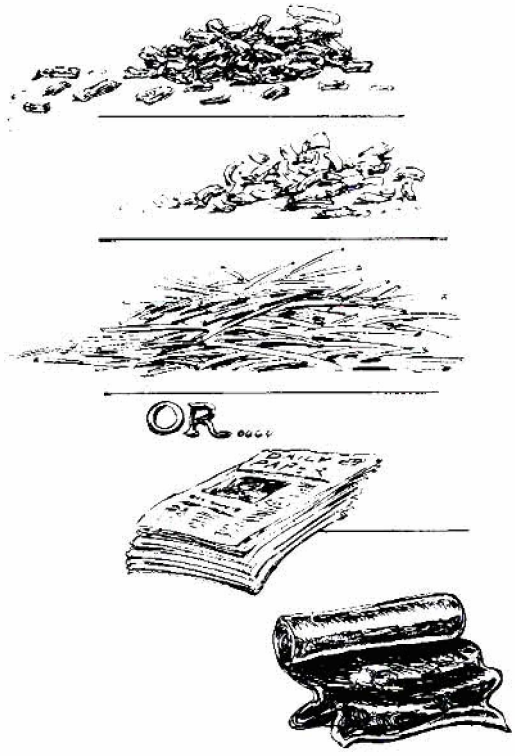
Plants need light, air, water, and nutrients. A weed is any plant that takes light, water, and nutrients away from your vegetable plants by crowding them. When many plants are crowded into a small area, each plant gets only a small share of the available light, water, and nutrients and grows more slowly than if it were alone. When vegetable plants do not get as much light, water, and nutrients as they need, they produce small vegetables.

ACTIVITY

WEED THE GARDEN

1. Show your club which plants are weeds and which are vegetable plants. Your vegetables should be growing in a line right under the string. They will all be about the same size and look alike. The other plants are weeds. Some vegetables, such as carrots and beets, take a long time to come up. If you are not sure if a plant is a weed or a vegetable, leave it in the ground. Plants are easier to identify when they are larger.

2. Explain weeding to your club and demonstrate it to them. There are two ways to weed: pulling weeds and cultivating. To pull weeds, hold each one as close to the ground as possible and pull gently so the whole plant comes up, even the roots. Always pull the weeds that are close to the vegetable plants. To cultivate, you need a hoe or a cultivator. Scrape or lightly till the soil, cutting off the top of the weed. Do not cultivate closer than 3 to 4 inches from your vegetables because you could accidentally damage the roots.



NOTE: MULCHES
Mulch is a material you put on top of the garden soil between plant rows. It helps keep the soil moist and prevents weeds from growing. Mulch can be a plant product, such as bark, wood chips, or straw, or a synthetic material, such as newspapers or black plastic. Your garden does not require mulching because weeds grow slowly in the early spring when your garden grows.

3. Start weeding. Be sure the club members are using the tools carefully and properly. You might want to assign a specific row to one or two members.

Additional Activities

1. After you have shown the youths what weeds look like, help them learn by having them identify some weeds and vegetable plants. Can they tell which is which? Refer to the Cornell Cooperative Extension bulletin *Weed Control for the Home Vegetable Garden* (IB 216).

2. Form a "weed patrol." Pair off club members and send each pair in search of a specific weed, for example, lamb's-quarter or chickweed. After a specific amount of time, count the number of weeds that each group has.

3. Keep a list in a garden log of all the plants that are growing in your garden. You might want to make another list another day and compare them.

Thinning

Approximate time the lesson will take: 30 to 60 minutes, depending on the size of the garden

GOAL

• To teach club members why it is important to thin plantings, the proper thinning distances, and how to thin the vegetable plants.

Before the Meeting

Read over the lesson. Check the garden to be sure it needs thinning.

Thinning is a difficult practice for beginning gardeners to understand and practice. It doesn't seem right to pull up some of the plants you have worked so hard to grow. However, it is important for you as a leader to be comfortable with the idea and the actual practice of thinning so you can teach your group how to thin the garden.

Supplies

The Salad Garden Plant List (It gives thinning distances as well as planting distances.)

During the Meeting

INTRODUCTION

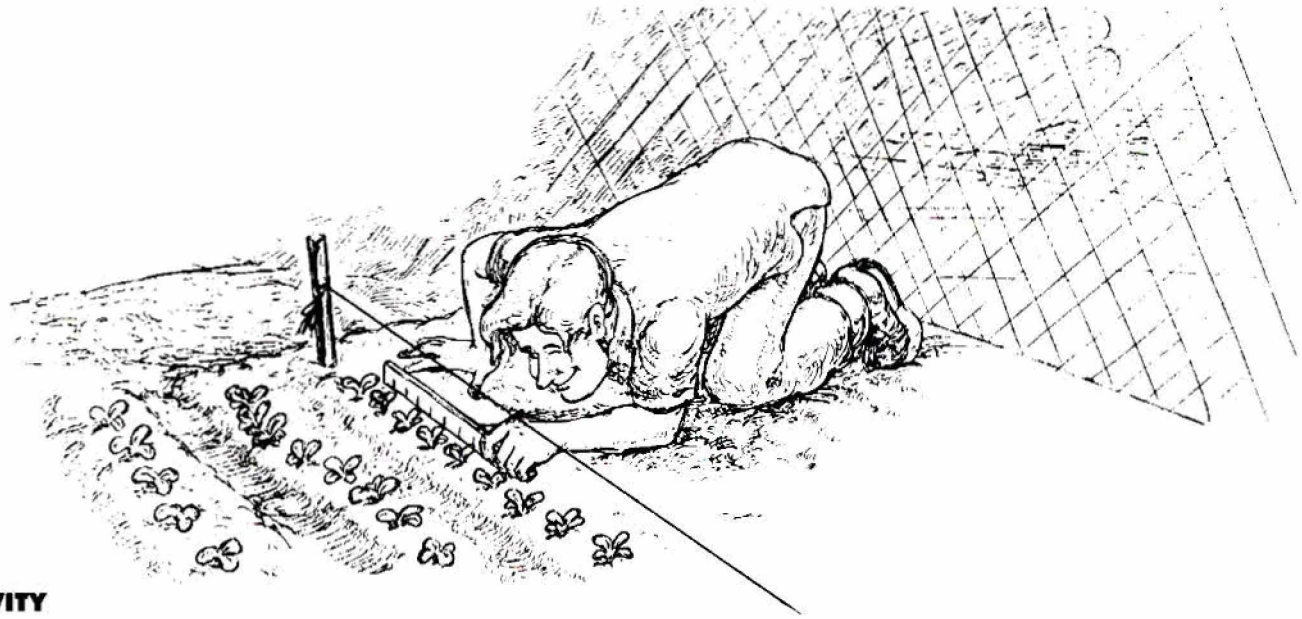
When we last met, we weeded the garden to help the vegetable plants grow. Weeds crowd a plant and keep it from getting everything it needs from the soil and air.

When vegetable plants are too close together, they act like weeds. Many vegetable plants in one small area compete with each other for light, water, and soil nutrients just like weeds compete with plants. Because the vegetable plants are too close together, they take light, water, and nutrients from each other. Therefore, we need to remove some of the vegetable plants so the ones that stay have enough room to grow.

Plants need more room than you might think. For instance, how much space do you think a carrot plant needs? About 1 to 3 inches within each row.

When you look at the garden, you will see that some of the vegetable plants are very crowded and do not have enough space around them. We need to pull up some of those plants so the plants remaining can grow and produce big, delicious vegetables. This is called thinning.

We only need to thin the rows in which we planted seeds. The transplants we put in were properly spaced and have room to grow. We planted the seeds close together because we knew that not all the seeds would germinate and grow.

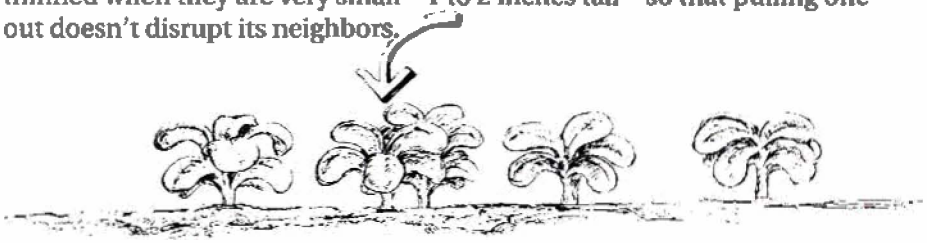


ACTIVITY

THIN THE VEGETABLE PLANTS

1. Find out how far apart the plants should be by looking at the Salad Garden Plant List. If the guide says to thin the plants to 2 inches apart, it means that the plants' stems should be two inches apart.

2. Demonstrate thinning. Pull up or break off some of the plants that are too close together. Try to pull up the smallest, weakest plants. However, if two big plants are right next to each other, one of them has to go. To tell the plants apart, you must look at the base of the plant. Plants should be thinned when they are very small—1 to 2 inches tall—so that pulling one out doesn't disrupt its neighbors.



3. Assign members to thin a specific row or rows.

4. Check to be sure the youths understand the instructions and are thinning properly. One way to help members with thinning is to have them pull out every other plant and then, if needed, every other plant again.

> **NOTE: EAT THE THINNED PLANTS**
> You can eat the tiny lettuce plants and other greens that you thin. Break off the roots, wash the leaves thoroughly in a 1 percent vinegar solution, drain, and serve.

Additional Activity

Leave one row of radishes unthinned and at harvest time compare those radishes with the radishes in a row that was thinned. How did they grow? Did they produce as well as the plants that were thinned?

LESSON 11:

Harvesting and Eating the Garden Salad

Approximate time this lesson will take: 1 to 1 ½ hours

GOAL

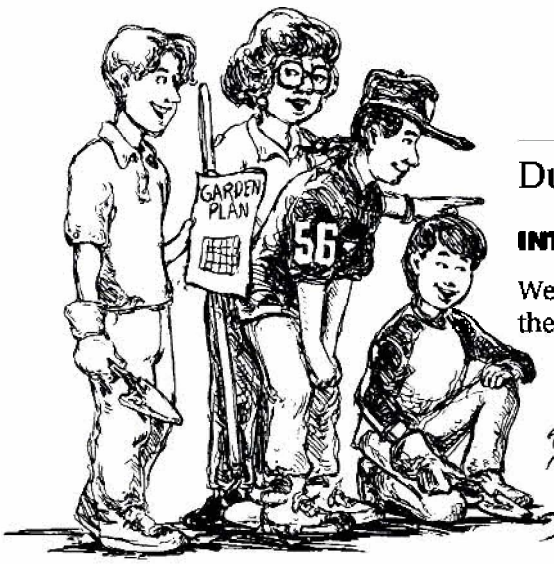
• To teach club members how to harvest the garden and how to prepare the harvested vegetables.

Before the Meeting

Read the lesson carefully and gather supplies. **Do not hold this lesson until the plants are ready to harvest.** If you are not sure the plants are ready for harvest, check with your Cornell Cooperative Extension agent.

Supplies

- A trowel
- Water to wash the vegetables
- Vinegar
- A vegetable brush
- A clean towel or colander to dry the vegetables
- A knife
- A cutting board
- A large bowl
- Salad tongs or two large spoons
- Salad dressing or salad oil and vinegar
- Plates
- Forks
- Napkins
- A stove
- A steamer pot



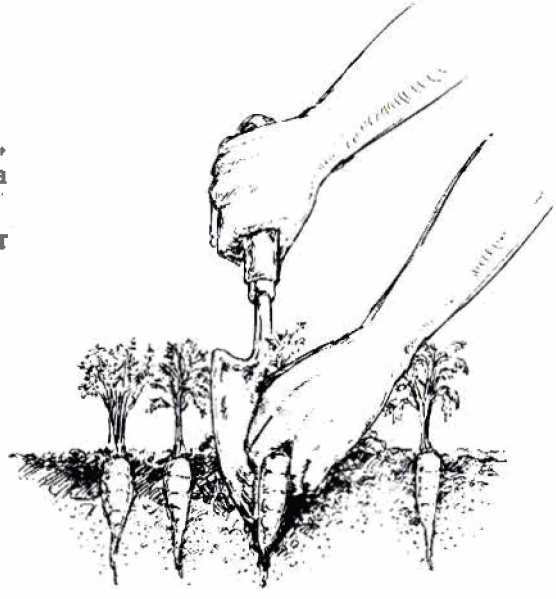
During the Meeting

INTRODUCTION

We have been growing vegetables for about 4 months. Today we will harvest the garden and eat what we have grown.

ACTIVITY

HARVEST THE GARDEN



1. Harvest the greens (lettuce, kale, Swiss chard, spinach, Chinese cabbage, turnip greens, beet greens, parsley, cabbage, and celery). If you only want a few greens, gently break off 4 to 5 outside leaves from a few plants of each type. If you need more, gently remove the entire plant by pulling its base or cutting the plant off at the soil line.

2. Harvest the root and stem crops (carrots, radishes, scallions, and kohlrabi). Root crops can be harvested by grasping the plant as close to the ground as possible and pulling gently. To help carrots and scallions out of the ground, push a trowel straight into the ground next to the plant and wiggle it back and forth while pulling gently on the plant. If the top breaks off, dig the plant out with a trowel or spade.

ACTIVITY

PREPARE THE VEGETABLES

1. Trim the vegetables you harvested from your garden before you eat them. Cut off the roots of the greens, and remove any outer leaves that look mangled, discolored, or wilted. Trim off the small roots and leaves from the root crops.

2. Wash the vegetables thoroughly in water that has a few drops of vinegar in it. The vinegar helps remove any lead from car exhaust that might have settled on the leaves. Make sure all greens are clean, and scrub the root crops with a vegetable brush or an old toothbrush. Rinse the vegetables and drain them in a colander or on a clean towel.

3. Prepare a vegetable salad. Tear the greens into bite-sized pieces. Use a sharp knife and cutting board to slice radishes, carrots, celery, and scallions. Mix the vegetables together in a bowl with salad tongs or two large spoons.

4. Provide a simple salad dressing, either bought or made by mixing one part vinegar with three parts salad oil. Olive oil is one of the healthiest salad oils. Serve the salad and let the club members add the dressing themselves.

5. Steam the vegetables that are not eaten raw, such as collards, kohlrabi, Swiss chard, and beet and turnip greens. Let the club members sample them with a bit of vinegar as they eat their salad.

ACTIVITY

TALK ABOUT THE HARVEST

Talk with the club members about why you prepared the food as you did. These are some questions you might want to ask them.

Q. Why is it important to wash the vegetables well?

A. Vegetables must be washed to remove dirt, and vegetables grown in the city can have lead from car exhaust on their leaves. Washing them in a 1 percent vinegar solution removes the lead.

Q. Should you wash the vegetables bought at supermarkets? Why?

A. Yes, because they may have soil or traces of pesticides on them that can be unhealthy to eat.

Q. How do you know when to harvest the vegetables?

A. Greens can be harvested almost anytime after the plant is about 4 to 6 inches tall. Radishes can be harvested when the root is about the size of a large marble. (You might have to pull one up to test the size.) Scallions should be about the diameter of a pencil. Cabbage can be harvested when the head is about the size of a softball and feels firm when you squeeze it. The cabbages you have grown, however, have not had a long time to grow and may be smaller and softer. The carrots in your garden are small. If you leave them in the garden longer, they will grow bigger.

Q. What happens when you do not harvest the vegetables on time?

A. Radishes taste bitter and hot if they are left in the ground for a few weeks after they are ready to harvest. Greens grow tall and spindly and produce flowers if they are not harvested regularly. (Sometimes, especially if it is hot, they grow tall before their harvest date.) Cabbage, carrots, kohlrabi, and collards can be left in the garden several weeks longer.

Q. What is the safest way to cut vegetables?

A. Use a sharp knife on a cutting board and cut away from you.

Q. Which is more dangerous, a dull knife or a sharp one?

A. A dull knife, for two reasons: (1) you are not as careful with it because you know it is dull and (2) you have to push hard to cut, so the chance is greater that the knife could slip and cut you.

Additional Activity

Club members may or may not want to plant more vegetables and garden in the summer. You might suggest that they turn the soil over and plant wildflower seeds, which the entire neighborhood would enjoy. Mixed wildflower seeds are available at garden centers.

The Salad Garden Plant List

Vegetable	*Recommended Varieties*	*Seeds or Transplants*	*How Far Apart to Plant Each Seed or Plant*	*How Far Apart to Thin*
BEET GREENS	Early Wonder, Lutz,Green Leaf, Crosby,Green Top, Albino	Seeds only	1"	2"
CABBAGE	Savoy King, Ruby Ball, Jersey Wakefield, Red Acre, Salarite, Market Victor, Market Prize	Transplants only	12"–18"	Do not thin
CHINESE CABBAGE	Lei Choy, Spring A-1, Mei Qing Choi, Two Seasons, Tropical Delight, Dynasty, Burpee Hybrid	Transplants only; use the plants you started from seed.	6"–18"	Do not thin
CARROTS	Nantes types, Pioneer, A Plus, Danvers 126	Seeds only	1/2"	1"–3"
COLLARDS	Champion, Blue Max, Heavi-crop	Either	Seeds-2" Plants-6"	6"
GREENS (such as cress, chicory, or dandelion)	Any variety for spring planting	Either	Seeds-2" Plants-8"–12"	8"–12"
KALE	Vates, Blue Knight, Dwarf Green Curled, Winterbor	Either	Seeds-3"–4" Plants-8"–12"	8"
KOHLRABI	Early White Vienna, Early Purple Vienna, Grand Duke	Either	Seeds-2" Plants-6"	6"
LETTUCE (looseleaf)	Black Seeded Simpson, Green Ice, Oak Leaf, Salad Bowl, Red Sails	Either; use the plants you started from seed	Seeds-2" Plants-8"	8"–12"
SCALLIONS	Any onion or bunching onion variety	Sets (sets are small bulbs) or seeds	Sets-2" Seeds-1/2"	Do not thin
PARSLEY	Any curly variety	Transplants only	4"	Do not thin
RADISHES	Any small variety, red or white	Seeds only	1/2"	2"
SPINACH	Melody, Bloomsdale, Indian Summer, America, Tyee	Seeds only	1"	4"
SWISS CHARD	Any variety	Seeds only	2"	6"
TURNIP GREENS	Sevin Top, Shogoin, Tokyo Cross	Seeds only	1"	6"