

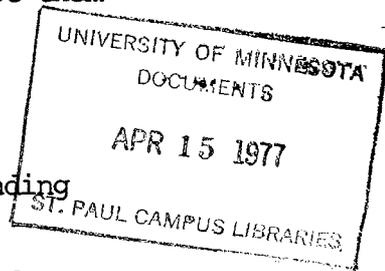
4-H LEADER'S HORTICULTURAL GUIDE

The continued development of youth through 4-H depends largely on people like you who are deeply interested in boys and girls. Encouragement and guidance from volunteer local leaders inspires young people to progress in the fundamental aims of 4-H. This guide will help you acquaint 4-H boys and girls with the many opportunities in horticulture today. Subjects range from planting a seed to landscaping a home. You will find aids for planning and conducting 4-H programs and many ideas for meetings, projects, visual presentations, talks, activities, and having fun. These suggestions represent the combined experience of many leaders from many states. Feel free to adapt them to fit your special needs and the purposes of your club.

This program exists to encourage 4-H boys and girls to:

- * Gain keen insight into nature and develop a better understanding of the basic principles of science relating to plant growth.
- * Acquire the knowledge and develop the skills needed to care for and manage a well-planned vegetable and flower garden, lawn, or commercial horticultural crop.
- * Contribute to better family health by producing essential nutritious vegetables and fruits for use throughout the year.
- * Learn to market horticultural products in an economical, approved way.
- * Learn correct planting; care of grasses, flowers, shrubs, and trees for beauty; and control of soil erosion.
- * Appreciate the importance and use of flowers and shrubs in everyday living.
- * Make home surroundings more attractive, provide an area for family recreation and outdoor living, and develop pride and joy in the home.
- * Develop sportsmanship, cooperation, and public-speaking ability through participation in related activities such as demonstrations, judging, tours and exhibits.
- * Develop leadership talents and work toward achieving the broad objectives of character and effective citizenship.

This publication is a reprint of a guide for leaders prepared by the National 4-H Horticultural Development Committee consisting of representatives of the state and federal extension staffs and the National 4-H Service Committee, Inc. The guide was published by Allis-Chalmers Manufacturing Company, Farm Equipment Division.



This archival publication may not reflect current scientific knowledge or recommendations.
Current information available from University of Minnesota Extension: <http://www.extension.umn.edu>.

WHAT'S BEHIND 4-H CLUB WORK?

4-H is that part of the Cooperative Extension Service which deals with youth development. Young people in a community organize themselves in a group with their own officers and their own local program, based on their needs. An adult man or woman leader such as yourself guides them. Each member has one or more individual projects centering around a responsibility of the home or farm. Members grow gardens, landscape grounds, raise livestock or poultry, make clothes, prepare foods, etc. They serve as officers and on committees of their own club. They have camps, tours, recreation, community service projects, exhibits, and shows. They learn to co-operate by working and playing together.

The 4-H IDEA did not happen all at once. Many ideas, persons, and programs were involved in the growth of the movement.

Horticulture played a very important part in the early history of youth education in our country. As early as 1828, a boarding school teacher in Butler County, Ohio, allotted parcels of land to his students and had them grow corn, cucumbers, radishes, tomatoes, shrubs, and flowers. These boys were learning by doing, just as 4-H members do today.

In the beginning, youth clubs, later to become 4-H Clubs, were organized strictly on a project basis. The first projects were corn production and tomato canning. These soon were followed by projects in cotton, poultry, and pigs.

The 4-H name and emblem was developed in 1911, serving both as a badge for members and as a label for canned tomatoes. Early records stated: "The four H's represent the equal training of head, heart, hands, and health of every child." This meaning has remained through the years.

LEADERSHIP IS EVERYBODY'S BUSINESS

THE ADULT VOLUNTEER 4-H LEADER advises and teaches in the local club and is a very important link in the 4-H chain. The leader is supported by the Land-Grant College or University which provides him with information about the background, organization, and objectives of 4-H. He understands and is able to work with young people. He organizes and supervises club meetings, works with parents, delegates responsibility and obtains cooperation, guides members in project selection and record keeping, and teaches.

There are unlimited opportunities for adults to help youth grow in wisdom, skill, stature, and character, through 4-H. There also are many

personal satisfactions for you as a 4-H leader. You meet new friends, learn new facts and methods, share recognition and honors with members, and develop leadership skills. Receiving the gratitude and respect of members, parents, and community, and watching boys and girls develop into successful young men and women is a fitting reward for your efforts.

Leadership competence varies among the individuals, but everyone can improve his leadership abilities by using them as often as possible. The relationship between adults and young people changes as the boys and girls grow. The 10- and 11-year-old member wants and needs more direction than the 14- or 15-year-old. Remember, there is a great difference between assisting boys and girls as an advisor and dominating them as a boss.

PARENTS CAN HELP. Favorable parental attitude, interest, and active cooperation are essential for the most successful 4-H experience. It is very important that you let parents know what is expected of their children in 4-H. Have your 4-H members "talk it over" with mom and dad before selecting their projects. Encourage parents to help select projects and activities to fit their home situation. Horticulture projects provide special opportunities for sharing and togetherness. The entire family can enjoy and be proud of the 4-H member's achievements.

Encourage the parents of your members to

- * Give their children opportunities for challenging projects.
- * Help plan projects in keeping with the child's interests, abilities, and home situation.
- * Help provide materials and equipment such as seeds, fertilizers, insecticides, and hand tools.
- * Be a resource person in the club where special talents relate to project work of the members.
- * Provide transportation for meetings and other club activities.
- * Hold occasional meetings in the home if possible.
- * Attend special 4-H events and exhibits.
- * Show approval of members' 4-H accomplishments.

OTHERS MAY SHARE. As an adult 4-H leader, you need not feel that all the burden of planning, arranging, and carrying on the program rests on your shoulders. There are many resources - people, organizations, and literature - that contribute to the over-all learning experience of your members and help you become a successful leader.

OLDER CLUB MEMBERS who have carried gardening and related projects usually will share their knowledge and experience with younger children. They can give talks or demonstrations on practices they have learned and can suggest ideas for programs that appealed to them when they were younger. Older members, depending on their experience, may also serve as project

leaders or Junior Leaders giving special help to beginning members.

JUNIOR LEADERS. Many states have a 4-H Junior Leader project which teenagers may carry as a regular part of their program. A Junior Leader is an older experienced 4-H member. He helps by assuming many responsibilities. Early in the club year, plan with your Junior Leaders how they can best assist with the program. Junior Leaders may:

- * Work with a few members on their projects.
- * Assist club officers with their duties.
- * Help a committee of members plan the club program.
- * Lead songs and recreation.
- * Arrange for transportation of members to meetings, club activities, and county or state events.
- * Make contacts for speakers, films, and tours.
- * Check record books at meetings.
- * Visit members' projects and talk with parents about the club's activities and program.

Remember that your Junior Leader needs guidance and support. Don't expect him to carry responsibilities beyond his capability. From time to time, review and evaluate his work with him.

PEOPLE WITH HORTICULTURAL EXPERIENCE AND BACKGROUND. Become acquainted with the members of organizations in your area, such as garden clubs, vegetable grower associations, nurserymen's or florists' groups, marketing associations, and horticulture societies. These are good sources for project leaders, speakers, subject matter information, and, on occasion, financial assistance for special programs. Your local Extension office may suggest other contacts.

BUSINESS ORGANIZATIONS related to horticulture are another helpful resource. They may furnish you with speakers for club meetings or provide materials for use in demonstrations or exhibits. Tours to vegetable growers, greenhouses, nurseries, farmers' markets, seed farms, fertilizer plants or wholesale and retail produce stores are of real interest. Your 4-H members can learn about career opportunities by visiting such organizations and talking with the staff.

BOOKS, MAGAZINES, CATALOGUES, FILMS. Your state Extension service provides many excellent bulletins and leaflets about horticulture. Most of these are free. There are also many commercially published books on all phases of gardening and home landscaping. Local and school libraries have some of these.

Farm magazines and publications about horticulture are other good sources of information from which your members can learn new ideas and facts.

Agricultural colleges, farm equipment companies, seed and fertilizer distributors, drug manufacturers, and similar companies lend slides, films, and booklets for club use. Most of these are free, except for mailing charges. Check with your local Extension office for details.

PLANNING THE PROGRAM

This section on Program Planning includes suggestions and ideas for members' projects; skills and practices you or members can teach; and for individual and club activities. These ideas are treated in three major horticultural areas: Vegetables, Ornamentals and Landscaping, and Fruits.

It may be possible for a member to carry projects in one or more areas or to shift from one area to another from year to year.

These suggestions are further grouped according to member ability levels by age. Since the age for boys and girls beginning 4-H varies from state to state, groupings are merely suggested for your guidance:

Beginners and young members	-- 9-12 years
Intermediate members	-- 12-15 years
Older and advanced members	-- 15-21 years

Requirements for project work also differ. Check the handbook on projects for your state or ask your Extension agent for further information on ages and requirements. In most states, members are expected to keep records and/or reports on their projects. They can make their reports more interesting by taking pictures and including photographs of their work.

In addition to these suggestions, you may also wish to include other ideas and activities during club meetings. ROLL CALL, for example, often provides a chance to start a meeting in a lively way: the members might answer the roll call by giving the name of a:

Favorite vegetable	Deciduous tree
Kind of fertilizer	Shrub that attracts birds
Method of mulching	Kind of small fruit
Garden tool	Fungicide
Flowering annual	Method of grafting
Ground cover	Method of preserving

These may suggest other ways for you and your members to answer roll.

Certain methods you can use to teach your boys and girls better ways to do things are called VISUAL PRESENTATIONS. These include the demonstration, the illustrated talk, and the skit. In a demonstration, you or your members show and tell others a good practice which has been learned. There is more information about demonstrations on pages 9-16.

VEGETABLES

What the member can do as project work

Skills and practices to demonstrate or discuss

Activities for members

For Beginning 4-H Members — Age 9-12

A member should have his *own plot* or care for or be responsible for part of the family garden.

(Plot may be a defined area along with or within the family garden.)

Area should be small and contain easy-to-grow, quick-maturing crops that young boys and girls like to eat and can be proud of.

Include simple science projects.

Garden planning
Seed testing
Sowing seeds
Seed treating
Transplanting
Identify kinds of vegetables
Watering plants
Knowing plant parts
Thinning for proper stand
Using fertilizer and lime
Insect identification and control
Weed identification and control
Exhibit preparation

Test seeds for germination results.
Make a plan of the garden before planting time.
Start a small box of plants in a window.
Collect garden insects — discuss where found and how to control them.
Collect weeds and learn their names.
Give a demonstration.
Tour members' projects; comment on practices seen.
Exhibit vegetables at local and county fairs.

For Intermediate 4-H Members — Age 12-15

Include a greater variety of vegetables in project if possible.

Space may govern expansion; in which case interest can grow into weed collecting and insect collection.

Carry out tests or trials using different varieties and/or methods. Report results to club.

Seed sowing and plant growing
Seed treatment — give more detail on *why* and *how* it is done commercially
What's in a bag of fertilizer?
Soil sampling and testing
Use of fertilizer and lime
Weed identification
Insect identification
Disease identification
Vegetable judging and grading
Tell the "why's" of:
Pesticide application
Cultivation
Mulches and mulching
Irrigation practices

Make seed flat germination tests.
Test soil to determine pH (acidity or alkalinity).
Learn plant parts.
Collect and identify garden insects.
Collect vegetable diseases.
Prepare spray mixture; spray plants. Report on merits of spraying vs. dusting.
Have a small mulch experiment — compare values of plastic, sawdust, straw, and none. Report results.
Plant and compare several varieties of same vegetable and report results.
Visit various roadside stands and report good and poor factors.
Demonstrate a new practice learned.
Exhibit comparison of different practices at Science Fairs.

For Older 4-H Members — Age 15-19

Where space permits, the project should have grown in size and kinds and varieties of vegetables. Include experiments where possible.

Many members will have gone beyond the home garden stage and will have a small roadside market or sell to neighbors and/or stores. These are money-making projects and definite "interest holders."

Girls may combine vegetable growing with a home canning and freezing project.

Grow a crop on contract for a commercial cannery or freezer where practical.

Discuss careers relating to vegetables.
Continue and expand items listed for intermediate members.
Demonstrate and/or discuss:
Principles of irrigation
Types of insecticides and how they kill
How diseases are controlled by chemicals
Soil types and structure
Plant propagation — plant growing structures, kinds of growing media.
Experiment with and demonstrate when possible how the following affect plants:
Temperature
Light
Water
Nutrients (fertilizers)
Growth regulators

Continue intermediate activities.
Grow plants for sale.
Visit a large commercial vegetable farm.
Visit a canning or freezing plant or a large regional market.
Have judging and identification meetings.
Participate in county and state judging contests.
Conduct variety trials or run experiments on new methods.
Tour members' gardens. Invite friends (including opposite sex). Combine learning program with social activity. For example, have a sweet corn roast along with a visit to corn variety trials.
Tour seed farms, experiment stations, greenhouses, and chemical companies to show career possibilities.
Visit state university experimental farm.

ORNAMENTALS AND LANDSCAPING

What the member can do as project work

Skills and practices to demonstrate or discuss

Activities for members

For Beginning 4-H Members — Age 9-12

Indoor Gardening:

House plants — know and grow several different kinds. Start plants by seed, cuttings, or divisions.

Outdoor Gardening:

Bulbs and bulbous plants — know and grow several different kinds of bulbs or bulbous plants. Propagate annuals from seed and learn how to care for them.

Lawn Care:

Mow and trim regularly.

Indoor Gardening:

How to plant seeds
Seed treatment
Watering techniques
Fertilizer application
Care of plants
How to make soil mixture for potting
Potted plants for inside the house
Flower arrangements to make

Outdoor Gardening:

How to start plants from seed
Movement of water through soil
Growing annuals and perennials
How to care for gardening equipment

Indoor Gardening:

Make a scrapbook showing different uses of plants.
Make an indoor window box.
Make a terrarium.
Identify plants by name.
Exhibit pictures or scrapbook, flower arrangement, dish garden or terrarium.

Outdoor Gardening:

Make a simple plan of a flower garden.
Force branches of spring flowering trees and shrubs.
Make a flower arrangement.
Collect insect pests of your garden.
Useful equipment to make: Bird Houses, Plant Stakes, Bird Baths, Row Markers, Exhibit Flowers and Plants at Fair.

For Intermediate 4-H Members — Age 12-15

Outdoor Gardening:

Commercial project — grow flowers such as chrysanthemums and gladiolus for local markets.

Home project — work with family to improve landscape design.

Establish a planned perennial garden, and maintain the planting.

Propagate perennial flowers and shrubs and trees correctly by cuttings, divisions, seeds, air layers.

Grow new varieties and try new methods.

Basic principles of flower arrangement

Flower arrangements you can make
Trees and shrubs and their use in landscaping

Plant propagation

Light requirements for plants

Pruning house plants

Weed identification and control

Soil sterilization

Kinds and uses of mulch

Irrigation for growth and protection

Insect identification

Effect of crowding of plants

Soil testing

Correct use of pesticides

How to make a landscape plan

How to plan a flower garden

Plant identification — to include wood and leaf collections of commonly grown ornamentals in the area.

Increase the number included in the collection each year.

Test soil for pH.

Collect and identify weeds.

Collect diseased parts of plants and preserve them for identification.

Grow and compare flower varieties.

Propagate several ornamental shrubs and trees.

Compare value of various mulches for weed control.

Design and plant a dish landscape.

Exhibit house plants, flower arrangements, corsages, shrub and tree propagation methods, weed specimens, plans and records.

ORNAMENTALS AND LANDSCAPING

What the member can do as project work

Skills and practices to demonstrate or discuss

Activities for members

For Older 4-H Members — Age 15-19

Indoor Gardening:

Project includes all aspects of house plant production as well as grooming and showing.

Outdoor Gardening:

Plant and maintain ornamental planting.

Help neighbors with garden, maintenance and education.

Start a new lawn or renovate an old lawn.

Construct some type of landscape structure — fencing, trellis, terrace, fireplace, etc.

Flower arrangement:

Include a study of the different types of arrangements and factors, such as selection of container, color and kinds of flowers to use, accessories, etc., which must be considered when designing and producing appropriate flower arrangements.

Planning the over-all landscape development for your home grounds:

Walks, drives, terraces

Plant materials (trees, shrubs, grasses, flowers)

Enclosure and shelter for home grounds

Enriching elements for home grounds

Plant propagation; media for growing plants; why plants have roots; function of plant leaves; effect of light on plants; pruning techniques and effects

Plant material for public, private, and service areas of landscapes

Use of growth regulator for fruit thinning, fruit set, propagation, sprout inhibition, dwarfing, etc.

How to move an evergreen

Disease identification and control

Why a nursery license; how to get one

Community planning (street planting, roadside beautification, parks)

Note to Leader: If you are not acquainted with some of these more advanced subjects, have the club invite nurserymen or plant specialists to discuss topics.

Commercial Project:

Produce annuals or perennials to sell at local market or roadside stand.

Landscape Home Grounds: Plan for *Public Area, Service Area, Garden, Outdoor Living Area*

Enclosures: low, medium, and tall plant materials; low, medium, and tall structural material; shelter — trees and windbreaks

Enrichment: select and use material which will please the five senses.

Propagate ornamentals by seed, layerage, cuttings, graftage, etc.

Useful outdoor equipment to build or make: Planter Boxes, Barbeque Pits,

Outdoor Lights, Fences, Baffles (to divide areas, etc.), Patios

Nutrient culture of plants.

Test effect of different fertilizers on lawn grasses.

Hold a judging activity for flowers and arrangements.

Make wood or leaf collections.

Make Christmas decorations for home and sale.

Tour commercial firms.

Hold flower bazaar.

Compare effect of height of mowing on lawn vigor.

Exhibit flower arrangements, potted plants, pictures, plans.

Collect and prepare plants for identification.

Experiment with night lighting in the garden.

FRUITS

What the member can do as project work

Skills and practices to demonstrate or discuss

Activities for members

For Beginning 4-H Members — Age 9-12

Before starting with a small fruit project, the member should understand that most kinds require two years to produce a crop. Even so, berry projects can be a worthwhile learning experience for young members. These may include strawberries, raspberries, grapes, brambles, etc., depending on member's interest, ability, and available land.

Planting — when and how
An important cultural practice
Varieties — their advantages and disadvantages
Fertilizing
Mulching berries
Weed control
How to pick and handle berries for marketing
How to select for canning, freezing, or exhibiting fruit products

Give a simple demonstration.
Sell extra products to neighbors or local store.
Tour commercial fruit farms.
Exhibit canned or frozen fruit products.

For Intermediate 4-H Members — Age 12-15

As the member grows older, he can enlarge his project.

Grow more kinds of small fruits, as space will allow.

Additional projects each year should be within the member's means and ability. At the same time, he should make the project a challenge and not a routine affair.

Take part in more activities relating to fruit. (demonstrations, exhibits, tours, experiments, etc.)

Pruning — correct way, equipment, and why
How to pick cane fruits
Soil fertility — soil testing — when and how to apply fertilizer, manure, and lime where appropriate
Mulching and weed control
Disease control
Insect control
How to exhibit canned or frozen fruit products
Varieties of small fruit for home planting
Pruning cane fruits
Systems of growing strawberries plus bed management

Plant and compare results of two or more varieties of a small fruit.
Compare mulching practices and report results to club.
Demonstrate an approved practice at a club meeting.
Visit commercial growers of various kinds of fruits.
Make jellies and preserves.
Exhibit fruits at fairs, as fresh, canned, frozen, or preserved products. (Frozen products require special facilities.)

For Older 4-H Members — Age 15-19

Small Fruits:

Besides growing small fruits, older members can experiment with varieties, mulches, fertilizers, fruit setting compounds, weed killers, and other factors which affect plant growth. This may stimulate some towards a scientific career. Get specific directions from your county Extension office, agricultural college, Agricultural Experiment Station, or local library.

Tree Fruits:

It takes several years from planting for tree fruits to bear a crop. Members may prefer to care for and manage trees already fruiting, rather than start from the beginning.

How to spray a fruit tree
How to pick tree fruits
Grading fruits
When and how to harvest tree fruits
Ways to market fruits
Exhibiting fruits
Storage of fruits
Freezing and preserving fruits
Making jams and jellies
Biennial bearing
Methods of spraying fruit trees
Career opportunities in fruit and related industries

Continue activities in intermediate section.
Raise and sell plants of small fruits.
Test varieties from planting through production.
Compare pruning programs; insect and disease control; and weed killers.
Conduct a roadside market or sell fruit products.
Compare preservation methods and report results.
Tour fruit processing plant or wholesale market.
Visit experimental station or laboratory.
Exhibit fruit products at local, county, or state fair.

An illustrated talk is simply a talk in which pictures, posters, or charts are used. In skits, information is presented by play acting.

GAMES, QUIZZES, and STUNTS of a horticultural nature also add interest and fun to club meetings. Some of these are suggested on pages 16-19.

Plan to expand the members' interest in the production and marketing of horticultural crops. This includes the harvesting, packaging, processing, storage, handling, and sale of products. Include in the club program TOURS or VISITS to nearby commercial farms, market centers, auctions, processing plants, warehouses, truck and freight yards and wholesale and store outlets. Such activities will help your boys and girls to get a better picture of what happens to horticultural products from the time they leave the producer until they reach the consumer. These visits will also illustrate some of the career opportunities in horticulture.

Appeal is added to special programs by inviting other clubs with similar interests to take part in joint activities. Exchanging ideas as well as friendships is an important part of the development of youth.

Science plays an important part in our everyday living. Encourage your 4-H members to participate in activities dealing with the scientific aspects of horticulture. Knowing the "why" of a project is just as important as knowing the "how." Many interesting and challenging experiences await the 4-H'er who ventures into the field of science. Some ideas are suggested in the following pages how members can incorporate scientific principles and facts about plants into their projects.

Encourage older members to talk about career possibilities with commercial and business people employed in various phases of horticultural production and marketing. They may also discuss teaching and research opportunities in horticulture with University of staff members.

Be timely when planning programs with your members. It is usually most helpful to cover items a month or two in advance of the time of the year they take place in your locality.

Use bulletins, magazines, and commercial leaflets, as well as the talents of people, for resource information. All of these, and the following ideas, will help you develop your club's yearly program.

You may decide that some of the teaching methods and activities listed in the various sections would also be useable in other areas. If so, adapt and interchange to best suit the needs of your club's situation.

ACTIVITIES FOR MEMBERS

Do you want more mileage and efficiency from your teaching? Are there more effective teaching methods for you to exploit?

"Yes" answers to these questions rest in using well-planned member demonstrations. Research conducted to test results of several teaching

methods shows that people retain 10% of what they hear, 50% of what they see, and 90% of what they do. Demonstrational teaching is one of our best teaching devices. Let's use it more to boost the effectiveness of our Extension programs with youth and adults. Visual presentations are show-and-tell ways to create awareness, stimulate interest and thought, and to illustrate some procedures, techniques, and skills for effective teaching. These include demonstrations, skits, and illustrated talks.

DEMONSTRATIONS are often used to teach at club meetings, achievement programs, and in competitive events on the local, county, district, state, and national level. Members can also use them effectively at adult meetings to create interest and to call attention to specific problems. They are especially good on TV.

Pause a minute. Think about some local or community problem which needs to be cited or corrected. Next, think of ways to use demonstrations to stimulate thought, create interest, and initiate the action needed to solve a specific problem.

In a method demonstration, the demonstrator serves as teacher and tells and shows how to do a particular job. Broad topics suitable for demonstrations given by members include making a garden plan, treating seed, transplanting, potting plants, lawn care, arranging flowers, pruning, and grafting. A simple one-idea demonstration is suitable for beginning demonstrators. Longer, more complex demonstrations are appropriate for older, experienced members. Examples of short demonstrations for a beginner include treating a particular seed or transplanting a tomato or pepper plant. Some demonstrations suitable for experienced demonstrators include staking and pruning tomatoes, constructing an electric hotbed, and soil fumigation.

Remember, younger members should begin with short demonstrations. As members gain experience, they can give presentations of greater length and content.

Materials to use in demonstrations or other visual presentations include charts, graphs, posters, slides, actual objects, and models. When you or the members use charts, graphs, posters, and other visual aids, be sure they are simple and easy to see or read.

A demonstration has four parts: TITLE, INTRODUCTION, BODY, AND SUMMARY.

A TITLE should be short, descriptive, unusual, and catchy when possible, and, by all means, related to the subject. Some subjects which would be appropriate for demonstrations and examples of titles are listed on pages 11 and 12.

The INTRODUCTION is frequently the key to the success or failure of demonstrations, since it sets the stage by creating interest and stimulating the desire of the audience for more information on the subject. The introduction first introduces the demonstrator(s), then follows-up with significant local, county, state and national background information on the subject, the objectives of the demonstration, and last, a statement concerning the type of audience for whom the demonstration is made.

The BODY of the demonstration contains the meat, or substance, and tells and shows the audience how to do a particular job. Use a method approved by and supported by research findings. Cite references whenever possible.

Finally, in the SUMMARY, state the major points of the demonstration in a logical sequence without elaborating details. This summary should be concise, short, and to the point, or you might say "short and sweet." Demonstrators should be prepared to answer questions after concluding the demonstration. Repeat questions for clarity when necessary.

You or the members should PLAN the demonstration carefully several weeks before it is to be given. Consider (1) who the audience is, (2) its general knowledge of the subject, (3) how technical the subject is, (4) timeliness, (5) appropriateness, (6) purpose, (7) materials, and (8) length of the demonstration. A good job in planning, outlining, and developing the demonstration will lead to success.

REHEARSE after collecting the required materials and studying and reviewing notes. During rehearsal, make notes about length, manner of presentation, subject matter, and other points to be clarified. Here are check points to observe carefully during rehearsal:

1. Are charts, graphs, and posters easy to see and read?
2. Can the audience hear the speaker from anywhere in the room?
3. Are the materials used in the demonstration arranged so that they are accessible and easy to reach without fumbling and delay?
4. Does the demonstrator make unnecessary apologies? Avoid saying, "This is the first time I've done this" or "I'm not used to speaking before groups." Do the best job you can - the audience doesn't expect you to be perfect.
5. If a team is demonstrating, are the delivery and the action coordinated or does one team member do so much that the other's participation seems unnecessary?

SUGGESTED SUBJECTS FOR DEMONSTRATIONS, REPORTS OR ILLUSTRATED TALKS

For Beginners

- * Treating seeds
- * Picking strawberries
- * Transplanting plants
- * Mulching plants
- * Mixing a potting soil
- * Potting house plants
- * Planting seeds
- * Selecting fruit or vegetables for exhibit
- * Spraying or dusting for insect control
- * Collecting and drying flowers

For Older Youth With More Experience

- * Transplanting woody plants
- * Staking and pruning tomatoes
- * Propagating ornamental, fruit, or nut trees
- * Pruning one specific plant
- * Grading and packing specific fruits or vegetables
- * Fumigating soil
- * Taking a soil sample
- * Cutting and treating seed potatoes
- * Flower arrangement
- * Making corsages, wreaths, etc.
- * Plants for window boxes
- * Constructing an electric hotbed
- * Preserving insect or plant specimens
- * Lawn seeding
- * Making a landscape plan
- * Making a compost

These are only a few suggestions for demonstrations that are appropriate for different age groups. Remember that each of your club members may have an entirely different background and may need your help and guidance in selecting a demonstration suitable for his age, ability, and experience.

Here are some examples of demonstration titles which would be appropriate under the general heading of plant propagation:

As You Sow, So Shall You Reap (Planting seed as a means of propagation)

Whip Grafting (A vegetative method of propagation)

Growing Camellias in a Miniature Greenhouse (Air layering as a method of propagating the camellia, philodendron, rubber plant, etc.)

Propagation Techniques (One or two methods of propagating house plants - tied in with a discussion of rooting media and the use of hormone powders as aids to growing plants)

Other examples of titles are:

Seed Growth Insurance (Treating Seeds)

Plants in Pots (Potting House Plants)

Flowers Outside the Window (Plants for Window Boxes)

Prune to Produce (Pruning Fruit Trees)

On the next few pages are two samples to give you an idea of the kind of information to include and the way you might present demonstrations. You will want to check on recommendations used in your state for methods of presentation.

The first demonstration on "transplanting" has an introduction and

summary, in addition to the body. The material in the second on "cuttings" would be used in the main part or body of the demonstration; the introduction and summary are omitted.

You would need more details in each sample to make the presentation complete.

HOW TO TRANSPLANT

INTRODUCTION

The purpose of this demonstration is to teach you how to transplant tomatoes, cabbage, sweet potatoes, pepper, or other plants, and make them live.

In order to have early crops of cabbage, tomatoes, sweet potatoes, pepper eggplant, or broccoli, you must either grow your plants in a hotbed or plant box or buy plants already started. Then your next job is to transplant them to the garden or growing area. You must know how to transplant correctly - or your plants may die. So today you'll learn how to transplant - and make them live.

For the demonstration, you will need in addition to your plants:

Trowel or hoe	Water
Large bucket	Fruit basket or newspaper
Complete fertilizer	Insecticide

BODY OF DEMONSTRATION

1. First, prepare your ground. Plow or spade, then harrow or rake to break up clods and to smooth and firm the soil. When you have done this, use fertilizer as needed to make plants grow well. (Fertilizer may be applied on the soil before planting time, and/or as a starter solution at the time you transplant.)
2. Use only stocky, disease-free plants with good root systems. Discard small, spindly plants or those with poor root systems.
3. Plan to set your plants in late afternoon or in cloudy weather. The hot sun may make them wilt.
4. Take up plants from the bed or plant box carefully so roots will not be damaged. Leave as much soil on the roots as possible. Don't let plants wilt - keep them in the shade or in a bucket of water after taking from the bed or after buying them.
5. Make a hole with the hoe or trowel large enough and deep enough

to receive the roots without damaging them. Set plants a little deeper than they stood in the plant bed.

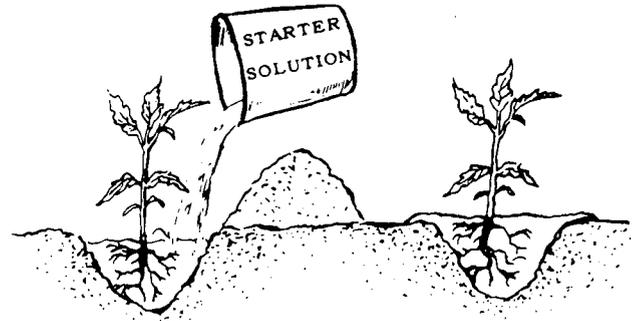
6. Firm the soil around the roots to be sure there are no air pockets.

7. After setting, use 1 cup of starter solution around each plant. Make this solution by dissolving 6 tablespoons of complete commercial fertilizer in 1 gallon of water. This will help get plants off to a quick start.

8. Cover the damp soil with a little dry soil to prevent rapid drying and crusting.

9. In hot weather, shade your plants for 3 to 4 days with an 8- or 16- quart basket, newspaper, or board. This helps to keep them from wilting until the roots become established in the soil and can absorb plenty of water.

10. Dust plants and soil around them with an insecticide (use materials recommended in your area) to prevent cutworms from cutting off your plants or insects from eating the leaves.

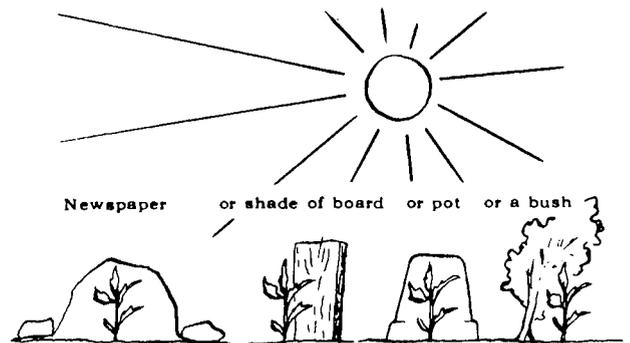


SUMMARY

In summarizing this demonstration about transplanting, remember these important steps:

- * Prepare the soil.
- * Set out only healthy plants.
- * Put them in a hole in the soil large enough to give roots room.
- * Firm soil and add a starter solution of fertilizer and water.
- * Shade the plants for a few days if necessary to protect them from the hot sun.

(The member should also mention sources where he got his information, and give the audience an opportunity to ask questions.)



HOW TO TAKE CUTTINGS

The following is an example of the main part of a demonstration. You would also need an introduction and summary.

Use garden clippers, a sharp knife, or a razor blade to take cuttings from the parent plants. Use only healthy stock. It is convenient to cut below a joint, but it is not necessary. Cuttings will root any place the stem is cut. Choose tip cuttings for all the plants in this project except ivy and hydrangeas. Stem cuttings are best for them.

Cuttings (also called "slips") should be three to four inches long, and placed in the rooting mix to a depth of two inches. Space them evenly about an inch apart.

You may use rooting hormones for faster results if you wish. Inquire at your local nursery for the types available.

WHEN TO TAKE CUTTINGS. You can take cuttings anytime during the summer. In order to have well-rooted cuttings by fall, start this project about two or three months ahead of the time you want to set them out. This will allow enough time for all the plants to develop roots.

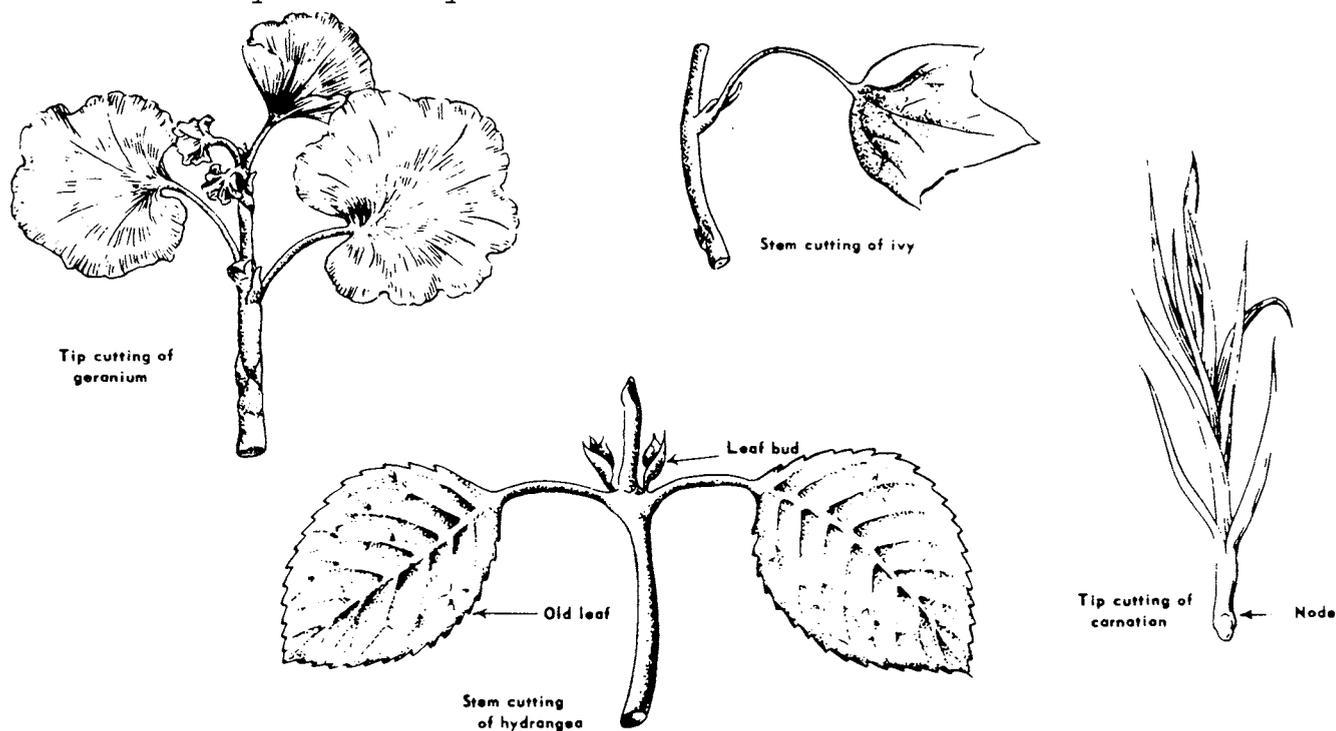
PLANTING MIX. The planting mix (often called the "propagating" or "rooting" mix or aggregate) which will be used in this project is vermiculite. This is a light spongy material made from the mineral mica. It comes in fine or coarse grade. Either size is satisfactory to use.

WATERING. To keep the vermiculite in a flat be sure to cover the cracks in the bottom with paper or cloth. Water the vermiculite in the flat thoroughly several times to get it wet enough to hold the cuttings upright before planting. When you have planted the slips, water again with a sprinkling can or a fine spray to settle the vermiculite around each cutting. Check the flats daily to see if they need water. Flats will dry out quickly if the weather is warm or if a wind is blowing. As long as the water will drain out of the flat there is no danger of overwatering. Water before the vermiculite gets dry.

WHERE TO PLACE FLATS. Place the flats on a table or box to protect from slugs and snails. Choose a fairly sunny place that is protected from wind. If the weather is very warm, make a frame over the table and cover it with cheesecloth or muslin to protect the cuttings. You may need several thicknesses to cut down the heat of the sun.

INSECTS. It is difficult to keep plants free of insects all the time. If you see insects on your cuttings or notice holes in the leaves, apply an insecticide right away. To kill or control slugs, snails, caterpillars, beetles, aphids, mites, and other insects, use methods

recommended for your locality.



JUDGING, GRADING, IDENTIFICATION

Instruction in judging, grading, and identification is an excellent way to train your members to recognize plants, seeds, weeds, varieties, insects, diseases, and characteristics associated with produce quality. Materials suitable for training purposes include photographs, pictures, actual or preserved specimens, slides, and models. One way to start a collection of these materials is by suggesting that each club member bring in specimens from his farm or home. Photographs and pictures from catalogues, magazines, bulletins, circulars, and leaflets are also good teaching aids. Amateur and commercial photographers may be possibilities as sources of supply for hard-to-obtain materials.

Opportunities for training in judging, grading, and identification are almost unlimited - imagination, planning, and practice are the ingredients needed for continuous improvement.

GAMES, QUIZZES, STUNTS

You may also use spelling bees, quizzes, stunts, and games to stimulate interest and thought or do some indirect teaching at club meetings. One approach is to have each club member paste a picture of a common plant on a 3x5-inch card and print the name of the plant on the back of the card. You can use a number of these in a team match and for identification purposes. Initially, you would be wise to start your

card collection on a single topic such as annual flowers, deciduous trees, flowering shrubs, or evergreens. Expand this type of training material as time permits to include similar sets on insects, diseases, and fruit and vegetable varieties. Again, your Extension agents may be able to provide you with other ideas on games and skits which could be adapted for use in clubs interested in horticulture.

Here are some sample horticultural games, quizzes, and stunts which you may use or adapt for your own group.

HIDDEN VEGETABLES

The name of a vegetable is included in each sentence. Sentences may be typed or duplicated, and members can underline the vegetable.

1. Conrad is hurrying to finish cultivating his garden.
2. While looking at some flowers, the foolish child caught a bee to play with.
3. John hung his tools neatly in the corner of the shed.
4. Give your record book to Ma to read.
5. If you're full of pep perhaps you'll help me weed.
6. The bus will stop east of town to pick up 4-H members going on the Horticultural tour.
7. You grasp a rag usually with one hand, and hold the vegetable in the other.
8. This in the end, I very much fear.

VEGETABLE SOUP

Unscramble these to find vegetables.

- | | |
|-----------------------------|------------------------|
| 1. abcabeg (cabbage) | 7. mucbruec (cucumber) |
| 2. baratuga (rutabaga) | 8. ortcra (carrot) |
| 3. crobolic (broccoli) | 9. putrin (turnip) |
| 4. fuwelilorac (califlower) | 10. roak (okra) |
| 5. kuslemmon (muskmelon) | 11. sapprin (parsnip) |
| 6. matoot (tomato) | 12. ultetec (lettuce) |

You can do this with fruits, flowers, shrubs, or trees.

SEED IDENTIFICATION

Have members bring left-over seeds to a meeting. Put a few of each kind on paper in rows on a table. Ask members to identify each. A variation is to divide the club into two or more teams. Put 10 to 15 seeds on a separate card table. Give each member the name of a seed written on a piece of paper. Line up teams, relay race fashion, and, at a signal the first member would run to the table, place his paper on the correct seed, run back to his team, tag the next member, and so on. The winning team would depend on the time taken and number of correct identifications.

You can also put seeds in small transparent bottles, boxes, or envelopes to use as specimens when teaching members to recognize various kinds.

Other identification activities include varieties of vegetables; kinds of flowers; leaves or short branches of shrubs; kinds of wood; insects and diseases.

TREASURE HUNT

Locate 15 or 20 horticultural objects around the meeting place (home or hall). Give each member a list of the hidden items with a blank space opposite to write in the location. At a signal the members circulate, looking for the various objects. When one is seen, the place where it is hidden is written in the blank. The item is not moved from its "hiding" place. At the end of a given time, the game stops and the member with the most correctly located items is declared the winner.

Examples:

1. Plant label window sill, kitchen.
2. White pine twig top of piano.
3. Empty plant pot near base of lamp, living room.
4. Kernels of corn in ashtray on radio, living room.
5. Trowel corner of fireplace.
6. Bag of fertilizer behind door, dining room.

To add interest, hide fewer items than are on the list.

"TRUE OR FALSE" QUIZ

There are many "true" and "false" quizzes you or your junior leader can make up for meetings. You could read the statement, and members could write on a piece of paper "T" (true) or "F" (false) opposite the number of the statement.

Examples:

1. T Carrot seed is planted about $\frac{1}{4}$ " - $\frac{1}{2}$ " deep.
2. F Insecticides are used to control diseases.
3. F The leaves of the lilac plant are deep green, shiny and about 6" long.
4. T Different kinds of mulches include sawdust, straw, grass clippings, and plastic sheeting.

5. F It is best to prune fruit trees immediately following blossoming.
6. T Irrigation helps to increase crop yields.

With a little imagination, you can adapt many kinds of games to horticultural subjects. Have members take part by asking two or three to make up a game or stunt and conduct it at a future meeting. Be sure the assignment is made far enough in advance to give them time to prepare.

CLUB ACTIVITIES

TOURS ARE FUN -- AND EDUCATIONAL. You, as a 4-H leader, and the club tour committee can generate lots of excitement and enthusiasm for horticultural projects with trips. Combine the serious learning experience with some recreational activity such as a picnic, wiener roast, swimming party, ball game, movies, or roller skating. Members will remember it as a highlight of the year.

There are many kinds of tours for the year, including project tours, marketing tours, and tours relating to careers, production or research. Each has a place in the program. The type of tour your club selects will be determined by the projects members carry and by ages of the members.

Project tours are visits to a member's home to inspect his project and hear the member talk about his experiences in the project.

Marketing tours take members to places where their products are sold, processed, or transported.

Career tours take members to places to view the broad opportunities in the horticultural field.

Production and research tours are visits to experimental plots, research farms, and places where members can study various phases of production, such as plant breeding, transplanting, and soil preparation.

THE CLUB PROJECT TOUR probably first comes to mind when we talk about tours. It is especially well suited to a group of younger members although it may be of interest to all age groups. The project tour should be planned at a time when the most can be seen and learned by members. This varies with the type of project. Beforehand preparation is important. You should help the tour committee discuss these items:

1. Time, date, and the place the group will meet set well in advance.
2. Have members obtain parents' permission for trip and try to fit the schedule of visits to suit the families involved.

3. Set an approximate time for each visit and a closing time for the tour.
4. Arrange transportation.
5. Explain what is expected of each member when the group arrives to visit his project.
6. Invite parents to attend - assistance may be needed if the group is large, so ask parents to help.
7. Make plans for providing food if a meal or refreshment is part of the program.
8. Remind members that this would be a good time for picture taking.

Each member acts as host and guide when his project is visited. He should explain briefly his experience in the project and give the others a chance to ask questions.

THE LEADER'S ROLE IS IMPORTANT. The project tour is a good opportunity for the leader to discuss the appearance of the member's project, give information on weed and disease control, good cultivation practices, pruning, and other phases of the project. He should encourage questions and discussion by all members. One of the advantages of a project tour, whether it is by the leader or Extension agent alone, or by the club, is to encourage the club member to keep his work up-to-date, and take pride in his work. It seems important if someone is going to see and appreciate it.

MARKETING is one phase of the 4-H program which often needs more emphasis. Members should learn about the functions of marketing and the relationship to production.

A marketing tour is a good teaching method to show the importance of producing quality products from the standpoint of grading, effect of disease and insect damage, and right variety for the market and its relationship to price received by the grower. The importance of packaging can be emphasized. What happens to fruits and vegetables between the time they leave the producer and arrive on the table of the consumer is another fascinating story which club members will enjoy. Frozen food plants, canning factories, potato chip companies, and others offer opportunities for marketing tours.

The transportation function of marketing will be of interest to older 4-H members. You and your members might visit large transportation companies to see how different products are shipped, the different types of equipment necessary to handle various products, and how loads are scheduled.

PLANNING THE MARKETING TOUR

Arrange tours well in advance. Write, visit, or telephone the manager of the place you wish to visit explaining who the group is, how many are in the group, and the purpose of the proposed visit. Suggest several dates for the tour. If the plant is a large one involving several processes, it might be wise to visit the plant beforehand to determine how much time will be needed and if all phases of the process should be seen.

The impression your club members leave with the plant manager and employees is important to your community and to 4-H. Your host will be favorably impressed by an interested, attentive group. Suggest to your members that they thank the host at the end of the tour, and also take a moment at home to write a note expressing their appreciation.

SUGGESTED PLACES FOR MARKETING TOURS

For all age groups

Hobby gardener
A good roadside market
Wholesale produce company
Retail store
Greenhouse or nursery
Wholesale flower market
Food distribution centers

For intermediate and advanced age groups

Terminal market
Cold storage plant
Processing plant
Packing plant
Horticulture department at state university
Experiment station
A cooperative, (suggested, but depends on type of group)

SUGGESTED PLACES FOR PRODUCTION AND RESEARCH TOURS

For all age groups

Garden centers
Equipment dealers
Nurseries
Greenhouse
Trial garden, public and private
Field days, fairs, exhibits
Flower shows
Science fairs

For intermediate and advanced age groups

Commercial growers
University experimental farm
Experimental plots on farms in the area

EDUCATIONAL EXHIBITS can be used to display the skills and achievements of 4-H members; promote interest in 4-H among members, parents, and prospective members; and attract attention to the horticultural program. Exhibits can interest people who may not otherwise hear about 4-H.

An exhibit may take the form of a table-top display, a booth with back and side panels, a window display, a series of slides in an automatic projector, a portable display board, or a bulletin board. Exhibits may be seen at fairs in store windows, at flower shows, at community meetings, in local stores, banks, schools at achievement days, and at other 4-H events.

Here are basic concepts to keep in mind when planning and setting up an educational exhibit:

1. Choose one idea which can be explained in a simple, catchy statement. Use few printed words.
2. Have one main center of interest to which the eye is drawn.
3. Develop the story completely using as few items as possible. Clutter is the worst enemy of an exhibit.
4. Create a design which is orderly, interesting, and artistic.
5. Attract attention with movement, color, light, sound, or a clever title and attractive design.
6. Make sure charts, posters, and other visuals are attractive, neat, clean, and easily read.
7. Judge exhibit by asking if it attracts attention, arouses interest, conveys a message, is well constructed for a neat and orderly appearance.
8. Select club members to tend exhibits who are well informed and can meet the public easily and create a favorable impression.

PROJECT EXHIBITS are important parts of the member's project program at 4-H shows, county fairs, achievement days, or state fairs. A well-prepared exhibit is a fitting climax to the project. These few simple suggestions will help members create a display to be proud of:

1. Know the rules about number and variety of fruits, flowers, plants, or vegetables to be exhibited.
2. Select specimens that are uniform, high in quality, free of disease and insect damage, true to variety type.
3. The exhibit should be neat, clean, and well arranged.

ACHIEVEMENT DAYS AND PUBLIC MEETINGS are among the many good opportunities for members to tell the public about their accomplishments. A community meeting attended by present members, prospective members, parents, and friends is a worthwhile time for exhibits, talks, demonstrations, movies, singing, and recreation. Such a meeting may take the form of an open house, an achievement program, or anniversary club party. The purpose of these events is to acquaint people with the 4-H program, give club members an experience outside the club meeting, and stimulate interest in the horticultural project.

RECOGNITION AND REWARDS

There are many ways to give recognition to 4-H members for effort and achievement. If we want desirable experiences and a pleasant outcome from the use of some recognition, an awards program must meet various educational objectives and levels. The program should

- * Contribute to the accepted educational objectives of the 4-H program.
- * Give all participants an equal chance for recognition.
- * Make all rules, regulations, and directions clear and precise.
- * Have standards which are not too hard or easy, but challenge all age groups involved.
- * Stimulate 4-H members to greater activity and self-improvement.
- * Develop the spirit of cooperation as well as spirit of competition.

You can recognize accomplishments of each club member by

- * Personal letters
- * Telephone calls
- * Visits to members' homes
- * Committee assignments
- * Recognition at achievement programs

Tangible awards include

- * Ribbons, cash, bonds
- * Equipment, merchandise, books relating to the project
- * Medals, pins, certificates



- * Trips
- * Scholarships

Your Extension agent can tell you about these and other special recognitions for 4-H members. Encourage your boys and girls to always strive "to make the best better," regardless of any recognition they may receive.

There are many satisfactions for you as a leader. Leaders not only feel satisfaction for jobs well done by themselves, but they take pride in observing and experiencing the accomplishments of their club and members.

When members of your club are singled out for special recognition, you, too, are rewarded for the efforts you have made to assist them. You know that the hours you spend with boys and girls will have a lasting effect on them. The results often show up years after the 4-H'er completes his work as a 4-H member.

You will find many satisfactions coming from 4-H leadership by

- * Sharing responsibilities in the 4-H program.
- * Helping select and guide successful projects and activities.
- * Assisting in developing and supervising local, county, and state events.
- * Publicity received for well-done jobs.
- * Meeting and working with new friends and people.
- * Seeing your boys and girls develop into useful citizens, with poise and self-confidence.
- * Knowing you have influenced some youth or families to adopt approved practices.

Whenever you can, be sure to visit with other leaders and share your experiences.

Remember, you are one of a family of over 400,000 local volunteer leaders in 50 states and Puerto Rico who have similar opportunities, problems, thrills, and rewards.

Since its original appointment, the National 4-H Horticultural Development Committee has included the following representatives of State and Federal Extension Staffs and the National 4-H Service Committee, Inc.

Owen S. Trask, Chairman

Russell L. Childress

Mylo S. Downey

Charles M. Drage

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Norman F. Oebker

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