

4-H

Plant Science Proficiency Program

A Member's Guide

OVERVIEW

The **4-H Plant Science Proficiency program** helps you learn what you need to know about your 4-H project. Your project leader will help you in setting and achieving goals. Through your project, you will learn to demonstrate proper care of plants, propagation techniques, landscaping techniques and develop an appreciation for the aesthetic values of ornamentals around a home.

There are many resources to help you learn more about your project:

- ◆ The *4-H Publications Catalog* lists a variety of project materials and resources recommended for use in your project.
- ◆ The *North Region 4-H Educational Resources Lending Library* at your county 4-H office includes other books, videos and reference materials that can be checked out by members and leaders.
- ◆ Check to see if there are any horticultural groups or organizations in your community that conduct educational activities and shows. Local groups are excellent sources of help and information.

There are five levels in the Project Proficiency Program. You may choose how many levels you wish to complete:

- **Level I – “Explorer”**, you begin to learn about many different aspects of plant science.
- **Level II – “Producer”**, you practice and refine the many skills involved in the plant science area.
- **Level III – “Consumer”**, you become an experienced producer in your area.
- **Level IV – “Leader”**, allows you to show your own leadership potential.
- **Level V – “Researcher”**, you carry out a demonstration or experiment on some aspect of plant science, and prepare a paper or portfolio.

As you work through the proficiency program, your leader will date each skill item as you complete it. When all items in a proficiency level are completed, your leader will sign the Certificate of Achievement and notify your 4-H office.

Projects to be completed through this Plant Science Proficiency include: gardening and horticulture, mini-gardens, container gardening, ornamental horticulture and plant and soil science.

PLANT SCIENCE
Level I – Explorer

Date _____
Completed _____

- _____ 1. Identify and describe three species of trees or plants.
- _____ 2. Using a diagram or live example identify the parts of a plant.
- _____ 3. Describe the basic requirements for good soil.
- _____ 4. Describe the basic garden preparation and maintenance equipment a beginner gardener needs.
- _____ 5. Explain the nutritional requirements of your plants.
- _____ 6. Explain how to tell when your plant is ill and where to look for a solution.
- _____ 7. Describe the life cycle of a plant starting with a seed and ending with a mature plant.
- _____ 8. Find and use an organic way of fighting insect pests.
- _____ 9. Label six plants with both the Latin and the common name for each.
- _____ 10. Submit management records for a minimum of 90 days that indicates how often you provide water, fertilizer, weed control, and general care of your garden.
- _____ 11. Demonstrate basic pruning techniques of and equipment necessary for your plants.
- _____ 12. Define fifteen important, basic terms used in your project area.
- _____ 13. Explain two common courtesies when working with a group.
- _____ 14. Describe how to safely use three tools for gardening.
- _____ 15. Share one aspect of your project with other project materials.

Member's Name: _____ Date: _____

Project Leader's Signature: _____ Date: _____

KEEP IN YOUR RECORD BOOK WITH YOUR PROJECT RECORD.

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PLANT SCIENCE
Level II – Producer

Date _____
Completed _____

- _____ 1. Identify and describe six different species of trees or plants. Three of which must be native to your area.
- _____ 2. Give one example of a plant used for each of the purposes listed: cut flower, foliage accent, cut foliage, flower color, wind break, lawn tree, parkway, species, hedge, border, barrier, background, fragrance, utility-medical, utility-food.
- _____ 3. Name four plant growth factors and explain the basics of photosynthesis.
- _____ 4. Collect seeds from vegetables, field crops, flowers, shrubs and trees. Mount and label the seeds you have collected.
- _____ 5. Demonstrate four different techniques of propagation. Example: budding, cuttings, plant division, layering, grafting.
- _____ 6. Describe how your plant propagates.
- _____ 7. Experiment with at least two types of fertilizer, then tell which you prefer and why.
- _____ 8. Describe and demonstrate what you can do to protect your plant during hot and cold weather.
- _____ 9. Describe and give control measures for at least three diseases or problem conditions.
- _____ 10. Visit an established operation and learn how the plants are cared for and marketed.
- _____ 11. Prepare one food dish from an edible plant grown in your project and share it with your family or project group.
- _____ 12. Keep an account of cash expenses for equipment and materials.
- _____ 13. Do something creative with your project.
- _____ 14. Display your project outside your group.
- _____ 15. Help someone else by sharing your knowledge or by giving away a product from your project to demonstrate positive citizenship.

Member's Name: _____ Date: _____

Project Leader's Signature: _____ Date: _____

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PLANT SCIENCE
Level III – Consumer

Date _____
Completed _____

- _____ 1. Describe how you would replenish the soil with needed nutrients after testing your soil.
- _____ 2. Contact a local, state, or national association related to your project and determine what this association has to offer its members and other interested individuals.
- _____ 3. Describe how animals can destroy plants.
- _____ 4. Make a chart that explains how good selection can improve your stock.
- _____ 5. Describe self and cross pollination and the advantages and disadvantages of each.
- _____ 6. Invite a guest speaker to one of your meetings and introduce them to the group
- _____ 7. Describe two pros and two cons of chemical pesticides.
- _____ 8. Describe four types of soil structure and what you can do to improve each.
- _____ 9. Demonstrate three methods of weed control and explain when you would apply each method.
- _____ 10. Report on a secondary aspect or by-product of your project industry.
- _____ 11. Keep an account of cash expenses, time and labor charges. At the end of the growing season, compare your crop yield to your expenses.
- _____ 12. Keep a personal reference library of literature that will be helpful in your project.
- _____ 13. Describe five things you should consider in landscaping your home and tell why.
- _____ 14. Explain how to irrigate the following: container grown plants, lawns, and field crops.
- _____ 15. Take part in a demonstration or judging contest specific to your project area.
- _____ 16. Report the history of one aspect of your project (equipment, technique, origin, etc.)
- _____ 17. Alone or with a group, plan an activity related to your project.

Member's Name: _____ Date: _____

Project Leader's Signature: _____ Date: _____

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PLANT SCIENCE
Level IV – Leader

Date _____
Completed _____

- _____ 1. Complete one year as Junior or Teen leader in this project.
- _____ 2. Assist younger members in designing and constructing needed equipment.
- _____ 3. Prepare teaching materials for use at project meetings.
- _____ 4. Develop and put on a demonstration or judging event or train a junior team for such an event.
- _____ 5. Speak on a project-based subject before an organization other than your 4-H group.
- _____ 6. Assist at horticulture event in your community.
- _____ 7. Assist younger members in learning a specific topic in the project.
- _____ 8. Develop your own special activity. Chart your progress, plan the activities, analyze successes and problems. And report on findings.

Member's Name: _____ Date: _____

Project Leader's Signature: _____ Date: _____

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PLANT SCIENCE
Level V – Researcher

Date _____
Completed _____

- _____ 1. Report on the results of a demonstration comparing measurable differences in some aspect of management procedure. (experiment)

- _____ 2. Prepare a paper of 300 words or more on one of the following topics:
 - Management of plants
 - Fertilization
 - Diseases, prevention and control, and general sanitation
 - Markets and methods of marketing
 - Reproduction, breeding and genetics
 - By-product preparation for market, how marketed, and used
 - Keeping and using records as a basis for improving your plant project
 - Other

- _____ 3. Prepare a speech or illustrated talk to orally summarize your findings and present at a club or project meeting or other educational event.

Member's Name: _____ Date: _____

Project Leader's Signature: _____ Date: _____

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Certificate of Achievement

This certifies that

has completed the _____ Proficiency

in _____ County.

Explorer

Producer

Consumer

Leader

Researcher

Date

Date

Date

Date

Date

Leader's Signature

Leader's Signature

Leader's Signature

Leader's Signature

Leader's Signature

NOTES

Acknowledgments:

Guidebook Developed by Humboldt County Incentives and Recognition Committee: Paulette Crowell, Elaine Fenton, Tasha Fenton, Janet Foos, 4-H Volunteers; Rose Herrera, 4-H Youth; Teresa McAllister, 4-H Youth Development Advisor.

Support materials received from the following counties: Mendocino, Colusa, Santa Cruz, Stanislaus.

Materials reviewed by: Gary Markegard, Farm Advisor; Deborah Giraud, Farm Advisor, Humboldt County; Susan McBride, Marine Science Advisor, Humboldt/Mendocino Counties; North Region 4-H Youth Development Advisors and Program Representatives.

North Region Review Committee: Yvonne Steinbring, 4-H Youth Advisor, Shasta and Siskiyou Counties; Jeanne George, 4-H Youth Advisor, Glenn, Butte and Tehama Counties; Isela Valdez, 4-H Youth Advisor, Colusa and Sutter/Yuba Counties; Sharon Junge, County Director/4-H Youth Advisor, Placer/Nevada Counties; Valerie Coe, 4-H Youth Advisor, Modoc, Plumas/Sierra and Lassen Counties; Evelyn Conklin-Ginop, 4-H Youth Advisor, Mendocino County.

Local Review Committee: Marion Herrera, Luz "Nellie" Love, Mary Moore, Margaret Sager, Jennifer Stowe, Linda Leonardi, Andrea Molina, Marilyn Renner, Frances Scalvini.

Editing and Layout: Pat Johns, County Director/4-H Youth Development Advisor, North Region 4-H Program Coordinator, Lake County; Kandee Stolesen, Secretary, Lake County.

North Region 6/97

Publication No. NR-PP-010

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