

# 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 assist you in setting and achieving your 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 the home.

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

- The University of California Davis has free resources available online by visiting: <http://anrcatalog.ucdavis.edu/4HYouthDevelopment/>. This site lists a variety of project materials and resources recommended for use in your project.
- The Solano County 4-H Resources and Lending Library at our 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.

**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 names for each.
- \_\_\_\_\_ 10. Submit management records for a minimum of 90 days that indicates how often you provided water, fertilizer, weed control, and general care to your garden.
- \_\_\_\_\_ 11. Demonstrate basic pruning techniques 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 members.

Member Name: \_\_\_\_\_ Date: \_\_\_\_\_

Project Leader's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**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	Cut foliage	Windbreak	Parkway
Foliage accent	Flower color	Lawn tree	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 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 Name: \_\_\_\_\_ Date: \_\_\_\_\_

Project Leader's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**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 Name: \_\_\_\_\_ Date: \_\_\_\_\_

Project Leader's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

PLANT SCIENCE  
Level IV - Leader

Date  
Completed

- \_\_\_\_\_ 1. Serve as Junior or Teen leader in this project for one year.
- \_\_\_\_\_ 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 a horticultural event in your community.
- \_\_\_\_\_ 7. Assist younger members about learning a specific topic in the project.
- \_\_\_\_\_ 8. Develop your own special project related activity. Chart your progress, plan the activities, analyze successes and problems, and report on your findings.

Member Name: \_\_\_\_\_ Date: \_\_\_\_\_

Project Leader's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**PLANT SCIENCE**  
**Level V - Researcher**

Date \_\_\_\_\_  
Completed \_\_\_\_\_

1. \_\_\_\_\_ Report on the results of a demonstration comparing measurable differences in 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, project meeting or other educational event.

Member Name: \_\_\_\_\_ Date: \_\_\_\_\_

Project Leader's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

# Certificate of Achievement

*This certifies that*

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*has completed the Plant Science Proficiency*

*in Solano County.*

*Explorer*

*Producer*

*Consumer*

*Leader*

*Researcher*

\_\_\_\_\_  
*Date*

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