

# 4-H Astronomy Proficiency Program A Member's Guide

## OVERVIEW

The 4-H Astronomy 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 this project you will learn to identify and locate astronomical objects, model objects in our solar system and record keeping. You will also learn about the size and scope of the space industry as it relates to your project.

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 organizations in your community that conduct educational activities and shows. Local astronomers can be an excellent source 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 Astronomy.
- ◆ Level II – “Producer”, you practice and refine the many skills involved in learning about astronomy.
- ◆ Level III – “Consumer”, you become an experienced in aspects of astronomy.
- ◆ 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 astronomy, 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.

# ASTRONOMY

## Level I - Explorer

Date  
Completed

- \_\_\_\_\_ 1. List the nine planets.
- \_\_\_\_\_ 2. Define the term "gravity".
- \_\_\_\_\_ 3. What is the common name for a meteor?
- \_\_\_\_\_ 4. Research 1 planet and find 3 unique qualities about that planet using three resources. Report back to your group.
- \_\_\_\_\_ 5. Define the term "comet" and what it does.
- \_\_\_\_\_ 6. Which planet has a red spot?
- \_\_\_\_\_ 7. Who was the first American in space?
- \_\_\_\_\_ 8. Identify three foods astronauts eat in space.
- \_\_\_\_\_ 9. Which 2 planets have rings and what are the rings made of?
- \_\_\_\_\_ 10. What is the closest and farthest planet away from the sun?
- \_\_\_\_\_ 11. Explain how to use a telescope.
- \_\_\_\_\_ 12. What makes up the surface of the sun?
- \_\_\_\_\_ 13. Define the term "orbit".

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

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

## ASTRONOMY Level II - Producer

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

- \_\_\_\_\_ 1. What is the difference between an Apollo and a Space Shuttle?
- \_\_\_\_\_ 2. Visit a space museum or observatory.
- \_\_\_\_\_ 3. Research 3 different planets and find out 3 unique qualities about your planets and report back to your group.
- \_\_\_\_\_ 4. Which planet has the most moons?
- \_\_\_\_\_ 5. Make a model or draw a picture of the solar system for exhibit.
- \_\_\_\_\_ 6. Define the term "black hole".
- \_\_\_\_\_ 7. What is a star?
- \_\_\_\_\_ 8. How far away is the moon from earth?
- \_\_\_\_\_ 9. Which planet is known as the "topsy turvy" planet?
- \_\_\_\_\_ 10. Explain what went wrong with Apollo 13.
- \_\_\_\_\_ 11. Who was the first man to walk on the moon? And when?
- \_\_\_\_\_ 12. List two things on earth you can see from space.

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

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

# ASTRONOMY

## Level III - Consumer

Date  
Completed

- \_\_\_\_\_ 1. How long does it take Mercury to orbit the sun?
- \_\_\_\_\_ 2. How many constellations are there?
- \_\_\_\_\_ 3. Define the term "nebula".
- \_\_\_\_\_ 4. Define the term and locate a "constellation".
- \_\_\_\_\_ 5. Research 4 planets and find 3 unique qualities about the planets using 3 different resources. Report back to your group.
- \_\_\_\_\_ 6. What is the name of the Galaxy we live in?
- \_\_\_\_\_ 7. Chart the size and position of the moon on paper everyday for a month.
- \_\_\_\_\_ 8. How far away is the moon from the earth?
- \_\_\_\_\_ 9. What are the requirements for becoming an astronaut?
- \_\_\_\_\_ 10. Name the 2 different types of galaxies.

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

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

**ASTRONOMY**  
**Level IV - Leader**

Date  
Completed

- \_\_\_\_\_ 1. Serve as Junior or Teen leader in this project for one year.
- \_\_\_\_\_ 2. Prepare a lesson to teach at one of your project meetings.
- \_\_\_\_\_ 3. Develop a group presentation to present at a club meeting or other organization.
- \_\_\_\_\_ 4. Assist a younger member in learning a topic in this project.
- \_\_\_\_\_ 5. Develop your own special activity. Track your progress. Show the results at a project meeting when you have completed your activity.

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

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

# ASTRONOMY

## Level V - Researcher

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

1. \_\_\_\_\_  
Alone or with a group, select an astronomy topic you would like to know more about and research this topic. Share the information with others in two of the following ways: bulletin board display, written pamphlet, and news article, club/group discussion, judging kit, poster or radio.
2. \_\_\_\_\_  
Report on the results of a demonstration comparing measurable differences in some aspect of your project. (Experiment).
3. \_\_\_\_\_  
Prepare a paper of 300 words or more on one of the following topics:
  - Voyage into space
  - Famous astronauts
  - The nine planets (in detail)
  - Space nutrition
  - Training required going into space
  - Other
2. \_\_\_\_\_  
Prepare a speech or illustrate a talk or orally summarize your findings and present at a club or 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 Astronomy Proficiency*

*in Solano County.*

*Explorer*

*Producer*

*Consumer*

*Leader*

*Researcher*

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

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