

# 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 your 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 **4-H Publications Catalog** lists a variety of project materials and resources recommended for use in your project.
- ◆ The **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.
- ◆ The Lake County Office of Education conducts educational activities, at the Robert Taylor Observatory and Planetarium. The Clear Lake State Park is 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 Astronomy.
- **Level II – “Producer”**, you practice and refine the many skills involved in learning about Astronomy.
- **Level III – “Consumer”**, you become an experienced 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 and notify your 4-H office.

# 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's Name: \_\_\_\_\_

Date: \_\_\_\_\_

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

Date: \_\_\_\_\_

**KEEP IN YOUR RECORD BOOK WITH YOUR PROJECT RECORDS.**

*Approved by Lake County 4-H Council, June 2003  
Developed By: Jennifer Yzaguirre, 4-H Teen Leader*

# 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 the 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?
- \_\_\_\_\_12. List two things on earth you can see from space.

Member's Name: \_\_\_\_\_ Date: \_\_\_\_\_

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

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# Astronomy Proficiency 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's name: \_\_\_\_\_ Date: \_\_\_\_\_

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

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# Astronomy Proficiency Level IV – Leader

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

- \_\_\_\_\_ 1. Complete one year as a Junior or Teen Leader in this project.
- \_\_\_\_\_ 2. Prepare teaching materials for use at a project meeting.
- \_\_\_\_\_ 3. Assist younger members in learning about a specific topic in this project.
- \_\_\_\_\_ 4. Develop your own special project related activity. (Maybe a star gazing event)  
Chart your progress, plan your activities and analyze successes and problems.  
Then report your findings.

Member's name: \_\_\_\_\_ Date: \_\_\_\_\_

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

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# Astronomy Proficiency Level V – Researcher

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

- \_\_\_\_\_ 1. Alone or with your group, select an astronomy topic you would like to know more about and research this topic. Share information with others in two of the following ways: bulletin board display, written pamphlet, 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
  
- \_\_\_\_\_ 4. Prepare a speech or illustrate a 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*

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*has completed the* \_\_\_\_\_  
*Proficiency*

*in* \_\_\_\_\_ *County.*

*Explorer*

*Producer*

*Consumer*

*Leader*

*Researcher*

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

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

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

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

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

\_\_\_\_\_  
*Leader's Signature*

# *NOTES*

**Adapted from DNAR North Region  
Publication No. NR-PP-001**

**Developed By: Jennifer Yzaguirre, 4-H Teen Leader**

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