

# 4-H Ham Radio Communication Proficiency Program A Member's Guide

## OVERVIEW

The **4-H Ham Radio Communication 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 the project you will learn Ham Radio operations, laws and regulations of radio communications, and techniques such as morse code. You will also obtain a Technician Class License, and a General Class License.

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 *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 local amateur radio groups in your community that conduct educational activities, and field days.

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 Ham Radio communications.
- **Level II – “Producer”**, you practice and refine the many skills involved in learning about Ham Radio Communications.
- **Level III – “Consumer”**, you become an experienced radio operator.
- **Level IV – “Leader”**, allows you to show your own leadership potential.
- **Level V – “Researcher”**, you carry out a demonstration on some aspect of Ham Radio Communications, 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.

# HAM RADIO COMMUNICATION

## Level I – Explorer

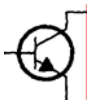
Date

Completed

- \_\_\_\_\_ 1. Tell who regulates radio communications.
- \_\_\_\_\_ 2. Name 6 types of radio emissions.
- \_\_\_\_\_ 3. Name 7 types of radio wave propagation.
- \_\_\_\_\_ 4. What is needed for 2 way radio communication?
- \_\_\_\_\_ 5. What safety hazards are associated with radio transmissions?
- \_\_\_\_\_ 6. State Ohm's law.
- \_\_\_\_\_ 7. Name 6 types of antennae.
- \_\_\_\_\_ 8. What do AM and FM stand for?
- \_\_\_\_\_ 9. What is broadcasting?
- \_\_\_\_\_ 10. What is the function of a repeater?
- \_\_\_\_\_ 11. What is a ground connection?
- \_\_\_\_\_ 12. What are harmonics?
- \_\_\_\_\_ 13. What does NEC stand for and what is its purpose?
- \_\_\_\_\_ 14. What function does an antenna serve?
- \_\_\_\_\_ 15. Explain what bandwidth is?

Identify the following schematic symbols.

- \_\_\_\_\_ 16.



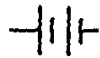
**KEEP IN YOUR RECORD BOOK WITH YOUR PROJECT RECORDS.**

*Approved by Lake County 4-H Council, December 2002  
Developed By: Roger Rosenthal, 4-H Volunteer*

\_\_\_\_\_17.



\_\_\_\_\_18.



\_\_\_\_\_19.



\_\_\_\_\_20.



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

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

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

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

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# HAM RADIO COMMUNICATION

## Level II – Producer

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

- \_\_\_\_\_ 1. Be able to pass the Technician Class License exam.
- \_\_\_\_\_ 2. Participate as a volunteer helping local Ham radio operators.
- \_\_\_\_\_ 3. Give demonstration on radio communications at club or county level, OR, do a presentation or display at a school, service club or fair.
- \_\_\_\_\_ 4. Visit a local Ham radio operator and observe him making two-way communications.

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

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

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# HAM RADIO COMMUNICATIONS

## Level III – Producer

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

- \_\_\_\_\_ 1. Be able to pass the General Class License exam and Morse Code test.
- \_\_\_\_\_ 2. Explore some historical aspect of the project and report to your project group.
- \_\_\_\_\_ 3. Explore career and industry related options and report to your project group.
- \_\_\_\_\_ 4. Participate in, or organize a community service or citizenship activity related to radio communications.
- \_\_\_\_\_ 5. Gather resources by starting a reference library related to radio communications.

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

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

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# HAM RADIO COMMUNICATION

## Level IV – Leader

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

- \_\_\_\_\_ 1. Complete 1 year of Junior or Teen Leadership in this project.
- \_\_\_\_\_ 2. Assist younger members in obtaining and installing 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 a judging activity.
- \_\_\_\_\_ 5. Speak on a Ham Radio based subject to an organization other than your 4-H group.
- \_\_\_\_\_ 6. Assist at community event regarding Ham Radio Communication.
- \_\_\_\_\_ 7. Teach younger members about learning a specific topic regarding Ham Radio Communication.
- \_\_\_\_\_ 8. Develop own special project related activity. Chart your progress, plan the activities, analyze successes and problems, and report on your accomplishments to your club.

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

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

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# HAM RADIO COMMUNICATION

## Level V – Researcher

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

- \_\_\_\_\_ 1. Report on the results of a demonstration comparing measurable differences in some aspect of your project.
- \_\_\_\_\_ 2. Prepare a paper of 300 words or more on a subject related to Ham Radio Communication.
- \_\_\_\_\_ 3. Prepare a speech or illustrated talk to orally summarize your findings and present at a club, 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*

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*Date*

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*Date*

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*Date*

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*Leader's Signature*

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*Leader's Signature*

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*Leader's Signature*

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*Leader's Signature*

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



# *NOTES*

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

**Developed By: Roger Rosenthal, 4-H Volunteer**

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# Leader Tips for Utilizing the 4-H Project Proficiency Program

The goal of the Lake County 4-H Proficiency program is to give members recognition and rewards in a timely manner and in a variety of ways to meet the diverse needs of today's youth.

It is also designed to assist youth in measuring themselves against 'standards of excellence' Each proficiency is comprised of five skill levels and should be designed to increase in scope and difficulty. The levels are:

- ◆ Level I – Explorer
- ◆ Level II – Producer
- ◆ Level III – Consumer
- ◆ Level IV – Leader
- ◆ Level V – Researcher

The proficiencies are three-fold in purpose:

- 1) To provide youth opportunities to sample a broad array of experiences, measure personal progress, and become self-directed learners.
- 2) To provide a standard of excellence where members are recognized for knowledge and skills they have mastered.
- 3) To provide guidelines for leaders to enhance and expand project content and experiences.

The Proficiency program is **not** designed to be an award, or a prize for the best in competition. Instead, members are **rewarded** for their personal progress. The intent of the proficiency program is to increase performance, while allowing members to be motivated, to be creative and to take risks.

The proficiencies are not a test. Youth should not be quizzed at the end of each 4-H year to determine how much they have learned. The proficiencies should be given to each youth member as a set of goals that they, as individuals, can work toward over one or more years. Completion of all five levels of a proficiency indicates "mastery of a subject.

The proficiency program is voluntary. Not all youth will find this type of activity rewarding. Many youth enter projects with their own goals. They join to learn a specific skill or group of skills, but not to achieve mastery of a subject. Additionally, not all project leaders will choose to go into such depth for each subject area. Completion of Level I – **Explorer**, may be all that is offered by a particular project leader.

We encourage leaders to give proficiency guides to members sometime during the first or second year in a project. At this point, the leader allows the member to determine which skills and/or knowledge areas he or she wants to master. Youth members can work on skills in several levels at the same time. The leader's job is to check each item in a level when the member has completed it.

For the skill areas which require demonstration, youth members may demonstrate individually to the leader (project or teen), the group, or the club at a local meeting. Members are not required to demonstrate in front of a group as we are measuring mastery of a subject, not public speaking ability. Some leaders leave time at the end of each project meeting for members to work on their proficiencies.

Leaders are cautioned not to accept a questionable answer. This indicates an incomplete mastery of the particular skill or body of knowledge. If the youth member is unsure of the correct method or term, use this time to teach the individual and allow member a month to think about it and review. The youth member will return with the knowledge learned and present it with confidence.

Allow a significant amount of time (one month) to lapse between the time a skill is taught and a member demonstrates mastery. This allows time to practice and achieve mastery, not merely reflect on a newly learned skill.

Reward immediately! Recognition is most meaningful when it is presented immediately following a learning experience. Initial and date each item as the member completes the skill. When all items in a level are completed, sign the Certificate of Achievement and notify your County 4-H Office.

A Proficiency medal, will be sponsored by the Lake County Council and awarded at the county achievement program when a skill level is completed. Youth may receive more than one medal per year. They may do this by completing two or more consecutive levels in one project area, or by completing one level in two or more projects.

For members to qualify for proficiency awards they must complete all the requirements below and give a 4-H presentation during the 4-H year.

- ❖ Have up-to-date and complete enrollment packet and enrollment fees on file at the 4-H office.
- ❖ Attend 80% of club and project meetings.
- ❖ Members must provide 4-H Records to the club leader for project completion verification. Records must include **Personal Development Report** and **Annual Project Report** form for each project a member is applying for a Proficiency Award, and the completed Proficiency Form.