August 2015

4-H 251 Fire Safety Leader's Guide

Follow this and additional works at: http://digitalcommons.unl.edu/a4hhistory

http://digitalcommons.unl.edu/a4hhistory/397

This Article is brought to you for free and open access by the 4-H Youth Development at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Nebraska 4-H Clubs: Historical Materials and Publications by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.
Fire Safety Leader's Guide

Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Leo E. Lucas, Director of Cooperative Extension Service, University of Nebraska, Institute of Agriculture and Natural Resources.

The Cooperative Extension Service provides information and educational programs to all people without regard to race, color, national origin, sex or handicap.
4-H
Fire Safety Education Program
Leader’s Guide

Objectives

Members and their families will learn to respond correctly to a fire emergency in their homes.
Members will learn methods and safety practices that will prevent fires.
Members will take steps to prevent fires in their homes and prepare their homes for a fire emergency.
Members will learn to identify the hazards they are faced with during a fire.

Understand Member’s Needs

Individual 4-H members have different interests, concerns and developmental needs. Developing a sensitivity to these will help insure the success of this program.

In general:

Beginning 4-H’ers (ages 9 - 12) tend to be mostly self-centered and family oriented. They respond best to projects that affect them personally or involve their families.
Intermediate 4-H’ers (ages 13-15) respond most enthusiastically to group projects. This is a time when young people need to feel accepted by their peers; group ties are very strong, and group projects give them more opportunities to be together and work together.
Advanced 4-H’ers (ages 16 - 19) want and need to be participating members of the world beyond family and friends. They can assume leadership roles as well as community responsibilities.
Regardless of their age level, members will work together more effectively if:

- they feel their ideas are being considered and acted upon.
- they are guided by your commitment to fire safety, your enthusiasm, and your confidence in their ability.
- each member has a job to do and can feel that he or she is a real part of the group.
- opportunities to learn by doing are available to all. Action activities will sustain interest. Young people learn best when they are actively involved in doing what they are learning.

Introduction

Everybody should have some knowledge of what makes a fire burn and how to control it. The identification of fire hazards is important. It is even more important that they be eliminated and that people understand why they are hazards as well as how they may be eliminated. This is important whether you live on the farm in a rural area, in the suburbs or in the city.

Your job as a club leader is a challenging one and can be most satisfying. The boys and girls with whom you work will be inquisitive. It will be your job to help them learn and to keep their interest at a high level.

This project offers boys and girls a chance to learn something worthwhile and to help others as they are learning themselves. The promotion of fire safety is a most satisfying experience for everyone involved.

This guide will help you obtain additional resources, identify community leaders who can help with the project, provide you with the answers to the questions in the project books and provide additional suggested presentations for some of the sections.

Project Materials

The Fire Safety Education program consists of three project books and this leader’s guide. The leader’s guide contains general information on 4-H Fire Safety Clubs; answers to questions asked in project books 1 and 2; a resource directory; and information on involving the local fire department with this project.
Project books 1 and 2 are designed to teach youth about the nature of fire, the causes of fire, and how to report a fire. Project book 3 will help club members become aware of their community's fire protection service and learn how to provide fire safety related services to their community.

The Fire Safety Education program should be taught in sequence. However, it is recognized that the age groups that make up fire safety clubs may vary greatly. Consequently, you may wish to move through the project books at a faster or slower pace.

Another way to handle this problem is to restrict the age group for each project book. For instance, only 9 to 10 year olds could sign up for project 1, and youth over 12 years old could participate in project 3. If your group consists of 4-H'ers over 12 years old, you may want to spend a few meetings reviewing projects 1 and 2, and then go on to project 3.

The Fire Safety Educational project can be used as the main project for a community club, however it will be more effective in clubs where the emphasis is on fire safety. It will be less effective when taken by only a few members in a club.

Involving the Local Fire Department

The members of the local fire department should be involved in serving as resource instructors for this project. These individuals have spent many hours learning about fire prevention and fire control. They have additional equipment available which will add to the depth of the instruction provided. They also have the knowledge and skill in handling hazardous materials which will be used with the project.

Many departments will also have a meeting room available which could be used for the classroom instruction.

The local fire chief or the chairman of the Volunteer Fire Department should be contacted to see if they would be interested in providing the instruction. Provide copies of the Fire Safety project books and this leader's guide so that they may see what materials are available to them.

Did You Learn Exercises?

The purpose of the questions in project books 1 and 2 are twofold: to stimulate discussion, and to identify and reinforce (for the 4-H'ers) the most important points.

Take enough time to discuss the paragraphs of each unit. Do not assume that the information is already understood or too basic. Often it's the simple things about fire that many young people (and adults) do not completely understand.

Most of the questions in project books 1 and 2 are taken from paragraphs preceding the questions. Club members should have little difficulty answering them. As an instructor, however, try to give additional information or try to get the youngsters to become more involved in the answer.

For instance, question 4 in project 1, "Introduction to the Fire Problem," could be discussed at some length. Give students plenty of opportunity to explain their answers. Giving an answer out loud is more indicative of understanding than a nod of the head. The idea is to solicit additional answers or comments rather than telling them everything. Most adults participating in this program should be able to expand upon the written commentary with only a little preparation.

A member of your local fire department would be able to present this information for you.

Things To Do

Projects and activities are suggested at the end of each project section. Additional suggestions for some lessons are included in this guide. Some are fairly involved and should be conducted outdoors or at someone's home or farm; others can be done right at the meeting site. If your club meets monthly, you may want to go through the discussion and questions one evening and follow this up with a field trip during the next session.

You may want to combine some of the suggestions or come up with entirely new ones. Remember, actual experiences and hands-on activities are the best teachers.

The members of your local fire department can be an excellent resource to help with these.

Community Involvement

Project 3 has two objectives: to explain to club members the organizational structure of their own community's fire service, and to provide fire safety services for the community.

For the first objective, basic information is provided under each of the subject headings, followed by pertinent questions. The idea is to have club members go to community fire leaders and seek out appropriate answers. Activities and projects are suggested for each topic.

The second objective is to provide a method by which club members may go into a community and perform services. This will help develop leadership skills in the youth while at the same time provide a worthwhile service to the community. Discretion and close supervision will be required. Younger members may not have the skills necessary to
participate in some community projects. Also, a homeowner’s right to privacy must be respected. A suggested list of community fire safety projects is on page 9 of the project book 3.

Additional Suggestions for Selected Lessons

**HOW A FIRE BURNS**

**Caution - These demonstrations should be done by a firefighter.** A fire extinguisher should also be available.

**Presentation**

1. The Fire Triangle - Draw a large triangle on a blackboard or large piece of paper attached to the wall. Ask the members to help fill in the three elements — heat, air and fuel on the legs of the triangle. Stress that for a fire to start or to continue to burn, any fire needs all three parts of the fire triangle.

2. Discuss the fuels in the form of solids and liquids and how they must change before they will readily burn. This can lead to a discussion on the safe handling of fuels and the dangers of playing with matches.

   a) Compare how different forms of wood react differently when a match is applied. Wood in solid form (hardwood block) will not start to burn readily when a match is applied. However, very fine wood dust, such as that created from sanding, will burn immediately when it is blown into a flame. A block of wood, fine sanding dust, plastic tube, matches, funnel and candle will be needed for this demonstration.

   b) Ask the question “will steel burn?” then demonstrate how different forms of steel react differently when a flame is applied. A piece of steel will not burn when a candle flame is applied to it, but a piece of steel wool does burn. A piece of steel, some steel wool, a candle and matches will be needed for this demonstration.

   c) Demonstrate that flammable liquids will not burn until they are vaporized or changed into a gaseous state. Compare the differences in two flammable liquids - kerosene and gasoline. This procedure may be followed to make the comparison.

   (1) Fill a pyrex beaker one-third full of kerosene.

   (2) Attempt to ignite the vapors by holding a lighted match over the liquid in the beaker. There will be no fire. This demonstrates that kerosene does not vaporize at room temperature.

   (3) Ask “What will happen when kerosene hits hot coals”? It will vaporize and burst into flame.

   (4) Pour the kerosene back into its marked metal container.

   (5) Repeat the above experiment again using a pyrex beaker one-third full of gasoline.

   (6) The gasoline vapors will ignite readily. They can be easily extinguished by placing a cover over the beaker. **Do this quickly.** Ask “Why does the flame go out when the cover is placed on the beaker”? The air is removed.

   (7) You can repeat the gasoline demonstration and use a piece of metal fly screen to extinguish the fire. Ask “Why does the flame go out”? In this case heat is being removed. A double thickness or more of fly screen will be needed.

   (8) Immediately following the demonstration pour the gasoline back into its marked metal container.

   (9) Discuss the storage and handling of any flammable liquids around the home. (Starter fluid for charcoal fires is frequently used carelessly.)

   (10) Supplies needed for the above demonstration include a small quantity of kerosene and gasoline in approved marked containers, a beaker, a beaker cover, several pieces of metal fly screen, fire extinguisher and matches.

   **Caution all members to not use flammable liquids demonstrations in their fire safety talks unless qualified supervision is available.**

**Fire Extinguishers**

The cooperation of your local fire department will be most helpful in a presentation of different fire extinguishers and their use.

Have members discuss the following information:

1. **Classes of fires**

   a) How are different types of fires classified?

   b) List the four fire classifications on a blackboard or a large piece of paper. Have the members list the types of combustible materials or fires unique to each classification.

   c) How does the class of fire affect what extinguishing materials are used to put out the fire?

2. **Selecting an extinguisher**

   a) What organizational approval should it have?

   b) What should be listed on the label of all approved extinguishers?

   c) How do you know if a fire extinguisher is big enough to handle a fire?

   d) What do the numbers and letters on the rating code mean?

   e) Do some comparison shopping in your local stores and chart the different types and sizes that are available versus cost per unit.

   f) Assign one fire extinguisher to each member or group of members and have them find the answers to the following questions. (Two to five members can work effectively with one extinguisher.) Provide
the following questions as a handout or place on a blackboard.

(1) Manufacturer

(2) Type

(3) Charge weight

(4) Weight of Refill

(5) Classification

(6) Freezing Point

(7) How often should it be checked?
   a) Does it have a pressure gauge?
   b) How is it checked?

(8) Directions on Use

(9) Who services this type of extinguisher in your community?

(10) How much does it cost to recharge this extinguisher?

When information for each fire extinguisher is completed have one member of each group report their findings.

3. How to locate a fire extinguisher
   a) What types of extinguishers should you have for your home, barn, car or combine?
   b) Where should you locate them? Indicate the possible location of extinguishers and ratings of each on a sketch of escape routes and detector locations. This would provide a complete fire plan for your household.

4. Discuss the many so-called homemade extinguishers that are around all homes, such as brooms, shovels, garden hoses, old rugs, baking soda, and sand. Show how they might be used.

5. Demonstrate the use of each extinguisher that is available for your club meeting.

6. If possible have club members extinguish small Class A and B fires. This exercise should be under the supervision and direction of a firefighter.

Career Exploration

Acquaint 4-H’ers with the employment opportunities in the field of fire safety and protection.

1. Make a list of the different fire safety jobs that are available in:
   - Fire departments
   - Insurance companies
   - Industry
   - Fire equipment field
   - Industrial safety field
   - Industrial fire brigade
   - Occupational safety field.

2. Invite a representative from one or more of these areas to tell your group of employment opportunities. As part of the discussion bring out possible advancement opportunities, training required, salary or wages that could be expected, advantages and disadvantages of the occupation and a description of the typical or normal activities of this occupation.

3. Arrange for members to spend a day with a person in an area that interests them and have them report what they learn to the group.

Answers to Questions

Use discretion in determining whether an answer is wrong or right. Some questions have specific answers, but many are more open ended and may be answered in more than one way. The important thing is that members understand why the answer is right or wrong. In some cases, more answers are provided to you than are called for by the question (e.g. Project 1, Classes of Fires, question 5).

Project 1

Introduction To The Fire Problem

1. People tend not to be concerned about something bad like fire until it actually hurts them.
2. 383
3. Children 5 years old and under, and older adults, over 65.
4. Children lack experience, training and judgment. Older adults may lack all of the above plus be physically disabled. All of these can deter a person from getting out of a burning building.
5. At the earliest age possible and before fire occurs in our house.
6. You can help prevent fires by understanding fire hazards, how to correct fire hazards, how to extinguish fires, how to conduct fire inspections, etc.
7. Each person has a responsibility to learn all he or she can about fire and fire prevention.
How A Fire Burns

1. Fuel, air and heat  
2. Block of wood, a piece of paper, and a living room rug  
3. False. The elements must be in the proper proportion.  
4. Heat  
5. Air  
6. Fuel  
7. Convection, conduction, and radiation  
8. Convection  
9. Conduction  
10. Radiation.

Classes of Fires

1. Fires are classified by the type of material that is burning.  
2. The three types of fires are Class A (solid fuels), Class B (flammable liquids), and Class C (electrical).  
3. The type of fire determines the type of extinguisher that should be used.  
4. Wood, paper, cloth, hay, straw, rugs, curtains, tires, clothes, etc.  
5. Gasoline, turpentine, fuel oil, gasohol.  
6. Workshop, basement, kitchen, or anywhere there are electrical wires, electrical boxes, or electrical appliances.  
7. A basement workshop fire might be started by cigarette ashes igniting a flammable liquid you're using to clean bicycle parts. This fire could spread to the workbench and include the electrical plug-in boxes.  
8. Most home fires involve Class A materials, which are predominant in the home.

Portable Fire Extinguishers

1. A. Mattress  
   B. Cooking Oil  
   C. Fuse Box  
2. False. The relative amount of fire the extinguisher is capable of putting out is also given.  
3. 20BC  
4. False. It takes practice to effectively use a fire extinguisher.  
5. Some  
6. ABC  
7. Twice  
8. C. Usually also involve either a Class A or Class B fire.  
9. Electrical shock to the person holding the fire extinguisher.  
10. Foams, powders, or carbon dioxide gas.

Detecting Fires

1. A. 1st stage. Could last for days.  
   B. 2nd stage. Visible products of combustion.  
   C. 3rd stage. Considerable heat given off.  
2. Second  
3. True. But it is often difficult to observe the first two stages, particularly in rapidly developing fires.  
4. Batteries or house current.  
5. An Underwriter's Laboratory (UL) or Factory Mutual (FM) label shows that the detector has been built and tested according to reliable national standards.  
6. The detector will sound a continuous alarm.  
7. A good smoke detector has a UL or FM label, test button or light, and low battery signal.  
8. False. The installation of smoke detectors is very simple and can be done by most people.  
9. False. But there are a few general rules such as: place detectors outside sleeping areas, avoid placing detectors near corners, and do not place detectors in the paths of air ventilation.  
10. Contact detector manufacturers, the Cooperative Extension Service, insurance agents, or your fire department of additional information on installing a smoke detector.  
11. Air does not flow freely in corners of buildings or where walls and ceilings join. Therefore, smoke particles would not get to the detector if the detector was placed in the corner.  
12. The instruction sheet included with each smoke detector provides information on how to care for your unit.

Fire Escape Planning

1. Practice it  
2. Panic; the chances of survival  
3. Making sure everyone in the house is notified and getting out  
4. Property  
5. Closed at night to keep smoke and gases out  
6. That the fire is right outside the door and you should leave the door closed  
7. Cover your mouth and nose and crawl along the floor.

Project 2

Reporting A Fire

1. To allow fire fighting forces to reach the scene of the fire as quickly as possible.  
2. The people of the community, their governing body, and the fire department are responsible for fire protection.
3. a. Warn everyone in the building.
   b. Call the fire department or dial 911.
   c. Help the fire department find your house.
4. a. Your name and your parent's home.
   b. Address or location of the burning building
   c. Directions to the house.
5. You should post the necessary information you will need to report a fire near the phone, because you may not be able to remember everything in an emergency.
6. The dispatcher can contact all the necessary emergency services as well as consult maps to help emergency squads get to the emergency site.
7. Dispatchers are trained to receive emergency calls. They have numerous resources available to provide emergency help.
8. Paid. Because they are already at the fire department.

Home Fire Prevention

1. The wiring is often not heavy or large enough to safely handle new and larger appliances.
2. It may wear, develop a bare spot, and eventually ignite.
3. False. Extension cords are not designed for permanent use. They receive abuse and develop cracks.
4. Oil; gas-fired furnaces; before
5. Basements, attics, garages, workshops, closets, and stairways
6. They burn very easily and help fire spread.
7. In the hands of children, lying in bed, or working around flammable liquids
8. Electrical appliances, curtains near stoves, and cooking with grease
9. We become used to hazardous situations that we see everyday and become comfortable with them to the point that we no longer consider the situation hazardous.

Farm Fires - Lightning

1. Lightning is the leading cause of farm fires where the origin is known.
2. Television, stereos, appliances, house wiring, homes, buildings, trees, and people
3. Lightning; electrical current
4. Strength; controllability
5. It flows through the object and into the ground.
6. Easiest
7. To provide a direct, easy, and safe path to ground for the flow of electrical current.
8. Air terminals (lightning rods), down conductors, grounding rods, and interconnecting conductors
9. The system not only becomes useless, but may actually increase the danger of a lightning strike.
10. Lightning might strike tall trees or buildings, a person standing on a golf course, a farmer riding a tractor, fence lines, animals in a field, or telephone and electrical power lines.

Farm Fires - Other Sources of Ignition

1. Exposure to weather, age, rough handling, and overloading.
2. New and bigger equipment is added to an existing wiring system and the system becomes overloaded.
3. The wiring becomes hot, melts the insulation surrounding the wire, and then ignites surrounding material.
4. Machinery shed, workshop, car or truck garage, animal facilities, and where water lines may freeze
5. The unit may be placed too close to combustibles, the unit may not be protected enough from animals, temperature controls may break or malfunction.
6. Because flammable liquids give off vapors that can be ignited. The flammable liquid might spill.
7. When the machine is being operated in fields, particularly during very hot and dry weather and during refueling operations.
8. ABC type extinguishers. The A extinguishing agent is needed to put out fires involving crops or crop by-products. The BC extinguishing agent is needed for fuel fires or fires involving electrical wiring of tractors and machinery.

Forest Fires

1. Homes, trees, campgrounds, and utilities such as power substations, and electrical power lines.
2. Because more and more people use forest lands for homes and recreation, and people cause most fires.
3. Extremely hot and dry conditions.
4. Individuals who use forest lands, the forest service, rural fire companies, and local governing bodies.
5. Government agencies can provide rules and regulations that will help the people who use forest lands keep forest fires down to a minimum.
6. By providing educational programs, fire departments can help people learn how to prevent forest fires.
7. Forest rangers help supervise the activities of people who use public forest lands. They also warn us when conditions are especially dangerous for forest fires.
8. All of us can do our share in preventing forest fires by behaving responsibly when using forest lands and following all rules and regulations concerning forest fire prevention.

Burns and Scalds

1. 300,000; 12,000
2. A burn is the destruction of skin tissue.
3. Flame, explosions, hot liquids, hot metal objects, chemicals, and electrical current can cause burns and scalds.
4. Burns are classified as 1st degree, 2nd degree, or 3rd degree.
5. 1st degree - On the surface only, painful reddened
6. 2nd degree - Blistering, heals without grafting
7. 3rd degree - Skin is discolored; could be white; brown, or black; little pain
8. The very young and the very old are most severely affected by burns. Their hearts are less able to withstand the shock of the burn.
9. Extent (how much skin) of burn, depth of burn, location of burn, age of victim, and special existing factors such as pre-existing illnesses determine severity of burns.
10. The five basic steps to remember when treating a burn victim are:
   1) check to make sure the person is breathing,
   2) do not provide food or drink,
   3) do not bandage,
   4) do not cover burn with ointments, and
   5) remove jewelry before swelling begins.