

# WILDFIRE PREVENTION SCHOOL PROGRAM

## Grade 5

Minnesota Department of Natural Resources

Division of Forestry

Basic Fire Prevention Concepts

Presentation Introduction

Grade 5 Lessons

Lesson I - Forest Fire

Lesson II - Managing Forests for Multiple Use

Lesson III - Smokey Bear said What?

Presentation Conclusion

Handout

Forest Crossword

## Credits

Ministry of Natural Resources  
Fire Prevention School Program, Ontario, Canada

National Wildlife Federation  
1400 Sixteenth Street, N.W., Washington, D.C. 20036-2266

Project Wild  
Salina Star Route, Boulder, Colorado 80302  
Western Regional Environmental Education Council

Parts Written by and Compiled by Sherry Carlstrom

Provided by the Fire Prevention Committee of the Minnesota  
Department of Natural Resources.

Graphic Design by Beth Petrowske, Graphic Arts Specialist,  
Minnesota Department of Natural Resources, Information and  
Education Bureau.

Project Coordinated by Mark Carlstrom, Minnesota Department of Natural  
Resources, Division of Forestry.



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# Video List

Your school may order videos by contacting: DNR Information Center, 500 Lafayette Road, St. Paul, MN 55155-4040, number 651-297-6157. Please order by catalog number.

## **Introduction To Fire**

11 min. VHS Cat. No. V926 Ages 4-6

Provided by DNR, Division of Forestry, Wildfire Prevention Committee. Slide-tape on video narrated by a child who discusses how trees are important to us in our everyday lives. Explains how fire, used properly, can be used to cook our food, heat water, and can be our best friend. Fire used carelessly can damage our homes and forests. Concludes with how children can be safe and avoid dangerous situations with fire.

## **“Ouch” Said the Tree**

6 min. VHS Cat. No. V927 Ages 5-9

Provided by DNR, Division of Forestry, Wildfire Prevention Committee. Slide-tape on video narrated by a child. Storyline is in “Ouch Said The Tree” song. Shows fires started by kids playing with matches, unattended campfire, trash burning, and cigarettes. Many slides of fires and fire suppression activities.

## **Please Don't Light That Fire**

7 min VHS Cat. No. V928 Ages 5-7

Provided by DNR, Division of Forestry, Wildfire Prevention Committee. Grade 2 lesson plan, narrated slide show. Nicholas and Jennifer go for a picnic in the forest. They find some matches and decide to start a campfire. Oakley the oak tree stops them and tells a story of how dangerous fires are to the trees in the forest.

## **Smokey's Fire Safety Tips**

8 min VHS Cat. No. V929 Grade 3

Provided by DNR, Division of Forestry, Wildfire Prevention Committee. Four children go for a hike in the woods; find animal sign and matches. As they try to light a campfire, Smokey comes and tells them about fire prevention and how the forest is home to animals.

## **Smokey Bear**

18 min. VHS Cat. No. V249 Ages 8-12

Provided by DNR, Division of Forestry, Wildfire Prevention Committee. Grandpa (Denver Pyle) and children play in forest through the seasons, have a campfire and tell the story of Smokey Bear. Ends with what Smokey means today. Smokey Bear song at the end.

## **Forest Fire**

8 min VHS Cat. No. V931 Ages 9-12

Provided by DNR, Division of Forestry, Wildfire Prevention Committee. Slide-tape on video. Minnesota oriented. Campfire, debris, and children caused fires; explanation and safety. Results of forest fires (i.e. losses).

## **Forests Are More Than Trees**

19 min VHS Cat. No. V932 Ages 10-18

Provided by DNR, Division of Forestry, Wildfire Prevention Committee. Slide-tape on video. Video covers: wildfire sign in the forest, different parts of forest used by different animals, tree rings, life cycles, tree types, tree ranges, tree and animal adaptation to climatic zones, logging history, old growth and preservation, public and private forest lands, distribution and use, timber products, watershed management, photosynthesis, carbon cycle, multiple use management, reforestation and deforestation due to development, acid rain, fire limiting forest use and recycling.

## **The Oregon Fire Disaster - 1987**

18 min. VHS Cat. No. V933 Ages 10 - Adult

Provided by DNR, Division of Forestry, Wildfire Prevention Committee. The 1987 Oregon fire season had some of the worst fire conditions in recent history. During the fire season two people died, many homes were lost, and many people were evacuated. Federal, state and private agencies and companies combined forces to work together to control these forest fires. Assistance came from across the nation to help out in one of the largest mobilizations of fire suppression resources in history. Good description of the job of fire fighters and the support effort necessary to bring major forest fires under control.

## Basic Fire Prevention Concepts

Some fire is good for the forest. It is nature's way of:

- Ž Eliminating diseased and dying stands of trees
- Ž Increasing pasture land for animals
- Ž Allowing trees to grow
- Ž Preparing a seed bed for new trees to get started
- Ž Putting minerals and nutrients back into the soil

In the days before people lived on this continent, forest fires started naturally by lightning.

Today, the Department of Natural Resources burns some small areas of the forest under carefully controlled conditions, being very careful to keep the fire from spreading into healthy stands of trees. The Department performs these burns to:

- Ž Reduce fire hazard on high risk sites
- Ž Prepare the site for new trees to grow
- Ž Control insects and tree disease
- Ž Improve or develop wildlife habitat
- Ž Maintain areas of native prairie grass

People depend on the forest for recreation, providing us with building materials and supplies, and providing jobs for many types of workers.

It is the Department of Natural Resources' job to protect the forest to make sure it stays healthy and is used wisely so we have enough forested land for recreation, enough wood to provide us with building materials and supplies, and to protect the jobs of those people who depend on the forest or forest products for their work.

Although some forest fires are good for the forest, each year there have been many fires occurring which serve no useful purpose and destroy valuable and healthy forested areas, and sometimes people's homes.

Lightning causes some forest fires.

People are the main cause of forest fires, either through carelessness or because they haven't learned how to be fire safe. People cause 9 out of 10 fires. Campers, berry pickers, hunters, homeowners, and children are some of the groups of people who commonly start forest fires.



There are things we should know that will help us to prevent forest fires:

- Ž Children should never play with matches. Many children have been hurt playing with matches. Many forest fires have been started as the result of children playing with matches.
- Ž People should compost their yard debris and leaves. If that is not possible, they should burn their yard debris using large metal barrels covered with a screen.
- Ž A campfire should be built on rock or sand – never on anything that could burn such as grass, needles, or leaves. Do not put rocks around a campfire, as they could hide burning embers. Keep the fire small. Don't build campfires under overhanging branches.
- Ž Put a campfire out when you are finished with it. Do not go away and leave it burning.
- Ž To properly extinguish a campfire, pour water on it, stir the ashes with a stick, then pour more water on it. Do these steps until everything looks wet, the ashes don't hiss anymore, no more smoke comes from the ashes, and the ashes feel cold.
- Ž Forest workers should never smoke while they are working. Their equipment should be in good working condition and fire safe.

If you find a fire burning, tell an adult right away. The fire should be reported to the nearest Department of Natural Resources office or call 9-1-1. If you have any information that might help the Department of Natural Resources determine what caused the fire, you should report it.

## Vocabulary

The following words are listed for the purpose of providing a vocabulary guide for your presentation. Students should become familiar with these words when presented to them in a fire prevention context. A few of these terms may be completely new to students (e.g., prevention), so the meaning should be made clear to them at the point in the presentation the word is used.

campfire  
careless  
cigarettes  
coniferous  
controversies  
debris  
deciduous  
destroy  
ecosystem

educate  
equipment  
forest fire  
hazard  
industry  
lumber  
mineral soil  
perspectives  
prevention

protect  
railway  
recreation  
supplies  
smokers  
suppression  
value  
weather conditions



## Presentation Introduction

Introduce yourself if you are not the student's regular teacher. Give a simple description of what you do.

Explain to the students that you will be talking about fire prevention and that they will be learning how to be fire safe. Ask the class if anyone knows what prevention means - if not, explain it to them.

Explain to them briefly what you have planned for the program.

Tell the students they will have a chance to ask questions at the end of the program.

### Lesson I: Forest fire

Introduction .....	5 min. maximum
Video: <i>Forest Fire</i> .....	15 min. maximum
Discussion of the Video .....	15 min. maximum
Activity: Design a Billboard .....	30 min. maximum
Student/Teacher Handouts .....	5 min. maximum

### Objectives

- |   |  |   |  |
|---|--|---|--|
| Ž | Develop an awareness of forest fire prevention.  | Ž | Develop a general understanding of the DNR's role in forest fire prevention and responsibility for putting out forest fires. |
| Ž | Develop a concern for the protection of our forests.   | Ž | Understand some of the ways we can prevent fires and become fire safe.   |
| Ž | Develop responsible attitudes with regards to forest fire prevention.                        | Ž | Develop the realization that we all have an individual responsibility to help prevent forest fires.                          |
| Ž | Develop a realization that people are dependent on the woods industry for supplies and jobs. |   |  |

### Materials

- |   |                                       |   |         |
|---|---------------------------------------|---|---------|
| Ž | Video: <i>Forest Fire</i>             | Ž | Crayons |
| Ž | Video Player (VCR/TV)                 | Ž | Markers |
| Ž | Poster Paper, enough for each student |   |         |

## Forest Fire

Before you begin, ask for a show of hands to see how many students think forest fires are always bad or sometimes good. Next tell the students they are going to watch a film called "Forest Fire" which will give them the correct answer. Tell them to watch and listen very carefully, because you will be asking them questions after the program. Tell them to look for reasons why we try to prevent forest fires.

### Questions:

1. Are all fires bad for the forest?
2. How are some fires good?
3. Why do we bother telling people to practice fire prevention?
4. What damage can a forest fire do?
5. How might a forest fire affect us?
6. What are some of the ways people start forest fires?
7. What prevention measures should people follow so they won't start forest fires?
8. Is there anything you can do to prevent forest fires?

### Cover these points:

- Ž children playing with matches
- Ž carelessness with smoking material
- Ž faulty equipment
- Ž carelessness with campfires
- Ž carelessness with burning grass, leaves or other debris.

### Activity: Design a Fire Prevention Billboard

Divide the class into groups of 4 students each.

Tell them that they will be designing a fire prevention billboard that will be used to tell the public about fire prevention.

Give each group a large piece of poster paper. Large sheets of newsprint or butcher paper will work well. They should also have markers and/or crayons.

Each billboard must include a picture and a slogan written in bold dark letters. Encourage them to create their own slogans and not rely on the Smokey Bear slogans.

After the groups have finished their billboards, display them in the room and discuss them.



## Lesson II: Managing Forests for Multiple Use

Introduction . . . . . 5 min. maximum

Discuss Forest Management  
for Multiple Use . . . . . 20 min. maximum

Role Play: City Meeting  
on Managing Deep Forest . . . . . 15 min. maximum

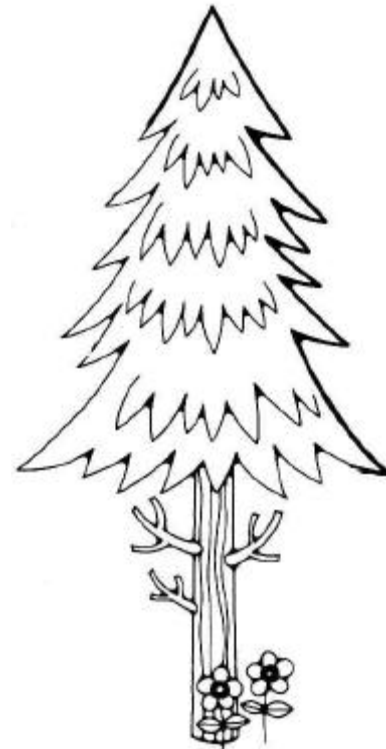
Student/Teacher Handouts . . . . . 5 min. maximum

### Objectives

- Ž Develop an awareness of forest fire prevention.
- Ž Develop a concern for the protection of our forests.
- Ž Develop a realization that people are dependent on the woods industry for supplies and jobs.
- Ž Develop responsible attitudes with regards to forest fire prevention.
- Ž Understand some of the ways we can prevent fires and become fire safe.
- Ž Understand the positive use of fire in forest management by the DNR.
- Ž Explain what forest management is and why it is important.
- Ž Develop a general understanding of the DNR's role in forest fire prevention and responsibility for putting out forest fires.
- Ž Develop the realization that we all have an individual responsibility to help prevent forest fires.

### Materials

- Ž 1 Cartoon Page (Cut into 5 parts: Lumber Co., Water Service, Recreation Dept., Wildlife Biologist, and Mayor)





## Activity: Managing Forests/One Forest Many Needs

Explain what forest management is and why it is important. Discuss the basic concepts of fire prevention and include information about wildfire and controlled fire. Discuss how controlled fire can benefit the forest and how it is used as a management tool.

Name several factors people might need to consider when deciding how to manage a forest. Use the background information on the page entitled Managing Forests to explain the concept of forest management to your group. Have the students divide into five groups. Each group will represent a different person from the city near Deep Green Forest:

Lumber Company  
Mayor  
Water Service

Recreation Department  
Wildlife Biologist

Cut the cartoon that follows this lesson apart and give each group a role to play. Tell the students that it is their job to convince the city that Deep Green Forest should be managed for their use.

After the role play situation, have the students name some factors the people in the town might need to consider when deciding how to manage Deep Green Forest (lumber needs, jobs, water, recreation, wildlife.)

Ask the students what they think the best use of the forest would be, then discuss with them the pros and cons of managing Deep Green Forest exclusively for lumber, recreation, or wildlife. Explain that forest managers often must consider many points of view before deciding how to manage a forest. But through careful planning, they can often manage a forests in a way that satisfies many different needs.

### Suggested Teacher Follow Up Activity:

If there's a forest management or other land-use controversy in your area, have the group learn more about it by reading newspaper articles or other accounts of the issue. Have them examine the different options as to how the land should be used, and set up a current events bulletin board that features articles on the controversy. You can also have the students look for articles on forest-use controversies in other parts of the country and around the world.



# ONE FOREST, MANY NEEDS



It looks like just another day in Deep Green Forest. Birds are chirping, squirrels are searching for nuts, and insects are flying through the air.



But in the town nearby, people are discussing the forest's future. From logger to wildlife biologist, each person has different ideas about managing the forest. Let's listen in:



Speaking for Louie's Lumber Company, I think we should harvest Deep Green Forest. Otherwise, a lot of valuable timber will just go to waste.



As the mayor, I support the lumber mill because the people of this town need the jobs the lumber mill provides.



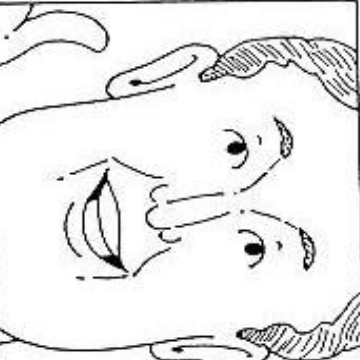
Jobs aren't all this town needs. I work for the water service. Trees hold the soil in place. Cutting them could cause the soil to wash into the river we get our water from.



That's one reason that some of us think the forest should be used for recreation, instead of logging. I'm from the recreation department. We think that campgrounds should be built in the forest. This would bring money into the community and wouldn't harm the water supply.



Jobs ... water ... recreation ... products ... wildlife—the debate continues. What do YOU think?



But too many people visiting a forest can damage it. As a wildlife biologist, I feel that protecting Deep Green Forest's plants and animals should be our number one concern. We should limit recreation in the forest and not allow logging at all.



## Background Information for: Managing Forests

Because forests are so important to both people and wildlife, they must be carefully managed. And that's where the science of managing forests comes in.

**Different Strokes:** Not all forests are managed in the same way. For example, a paper company may decide that it wants to grow as many pulpwood trees (trees that will one day be made into paper) as it can on a tract of land it owns. Another company, on the other hand, may decide that it wants to manage a forest not only for pulpwood but also for wildlife. Managing for wildlife might involve allowing the natural forest to stand in certain areas, putting up nesting boxes for birds and squirrels, growing certain wildlife food plants, and cutting timber to encourage the establishment of a variety of plants that are beneficial to wildlife. And some forests, such as wilderness areas, may be managed just by leaving them alone.

**Many Needs to Satisfy:** In some forests, a lot of different factors are worked into the management plan. For example, an area in a forest may be managed for trees that could eventually be cut into boards and other building materials. The forest as a whole may be managed so that certain kinds of wildlife can live in it, and also so that people can camp in it, fish in its streams, and so on. This concept of managing a forest for several different uses at one time is called multiple-use management. It is practiced mainly in national and state forests, and to a lesser extent in commercially owned and privately owned forests. Unfortunately, it is not always easy for forest managers to satisfy all the different demands people put on forests. Sometimes two or more forest uses will clash, and the conflicts and controversies that result can be difficult to resolve.

**The Ancient Ones:** One example of a forest controversy is the old-growth forest issue. Old-growth forests contain many very old, large trees. Some of these forests have never been logged. The land they are growing on

may have been too steep or remote. But today, new equipment is making harvesting easier, and the increased demand for wood products is fueling the drive to harvest old-growth trees. Much of this demand is based on the fact that these old-growth trees will not live forever and the thought that people should reap the benefit of the tree's products before they die and decay. Many people think that old-growth forests should either not be logged at all, or else managed in a way that allows only very limited logging. (Some are concerned about the rare species of wildlife that depend on these forests.) And some people feel that old-growth forests should be left intact simply because they are the last remnants of the vast, untouched forests that once stretched over much of the country.

**Changing Perspectives:** When European settlers first came to the New World, many of them viewed forests as taking up valuable space that could be put to better use if it was farmed. Obviously, our view of forests has changed through the years as we've learned how much forests have to offer.

But as the human population grows and new technologies are developed, people will put more and more demands on forests. The science of managing forests will become more important than ever – and the task of making sure there will be plenty of forests in the future will become an even bigger challenge.



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## Lesson III: Smokey Bear Said What?

Introduction . . . . .	5 min. maximum
Discussion . . . . .	15 min. maximum
Activity . . . . .	20 min. maximum
Student/Teacher Handouts . . . . .	5 min. maximum

### Objectives

- Ž Identify positive and negative consequences of forest and grassland fires.
- Ž Describe some of the changes fire can make in ecosystems.
- Ž Develop an awareness of forest fire prevention.
- Ž Become aware of some of the groups responsible for starting forest fires.
- Ž Develop a general understanding of the DNR's role in forest fire prevention and responsibility for forest fire control.
- Ž Develop responsible attitudes with regards to forest fire prevention.
- Ž Understand some of the ways we can prevent fires and become fire safe.

### Materials

- Ž Art Supplies
- Ž Butcher Paper or other paper for a mural display



Begin by discussing forest and grassland fires. Student's reactions probably will be negative at first; point out that while one harmful effect of forest fires is the destruction of habitat for wild animals, in some cases fire can improve habitat. Use the background information that follows this lesson to help with the discussion.

Brainstorm possible positive and negative effects of forest and grassland fires. Keep the list of brainstormed ideas posted for the student's reference.

Ask the students to divide into groups to make two murals – one of a forested area and one of grasslands. Each mural should portray changes from before, to during, and after a fire. Analyze and discuss positive and negative consequences of forest and grassland fires. Compare similarities and differences in the two areas.

Summarize conditions in which fire can be helpful, and conditions when it is usually not helpful.

This is a good time to discuss the basic concepts of fire prevention for this grade level. They are listed at the beginning of this document.

## Background Information For: Smokey Said What?

In managing public lands, government agencies for many years have been making a slow movement to change their attitudes toward forest and grassland fires. Whereas once all fires were suppressed or vigorously fought, some now are allowed to burn as part of a natural cycle within the forest and grassland ecosystems. In fact, there has been a movement to “prescribe” fires under some conditions and in some places in an effort to replicate natural cycles that contribute to maintaining healthy ecosystems.

Such “prescribed burns” are planned and tended by qualified resource managers. Prescribed burning is only employed after several agencies and their qualified personnel agree on the type, size and location of the burn needed. Such fires usually are designed to reduce the fuel load in a given area. Reducing the fuel load in a forested area, for example, can prevent fires from getting so hot that they eliminate virtually all life forms and even scorch the soil. That is, fires every five to ten years in some forest types can clear the heavy underbrush without harming the larger trees in the forest. However, a major fire after a 50-year accumulation of brush and maturing timber can be intensely hot and destructive.

Students may ask “if some fires are helpful, why does the U.S. Forest Service symbol of Smokey Bear say “Only you can prevent forest fires”?”

This message is aimed at people causing fires by error and accidents, like from carelessness in camping situations. The message also warns us about the terrible destructiveness of intentional fires set by people for malicious and mischievous purposes. Again, the only people who may be authorized to set prescribed forest and grassland fires are those who are fully qualified professionals, trained in the study of fire behavior and ecological systems to reinstate fire as a natural management tool. And these fires are only started under carefully controlled conditions with adequate resources on hand to suppress escaped fire.

It is still correct, of course, that fires can have negative as well as positive effects. Forest products companies, for example, in most cases would rather harvest trees than see them burn. If a fire is too large, too fast, and too hot – wildlife can’t easily move to safety. Individual animals may die. Short-term and long-term loss of vegetation can have a variety of effects, including impact on wildlife, and increase in silting and sedimentation in the waters.

However, there are possible benefits as well – particularly in the case of those smaller burns that do not get exceedingly hot. For example, forest and grassland fires can:

- Ž Maintain and enhance fire-dependent habitats such as prairies, savannas, chaparral, and jack pine forests.
- Ž Increase soil productivity by releasing and recycling nutrients tied up in litter and under growth.
- Ž Prepare soil for germination of some seeds.
- Ž Activate fire-dependent seed varieties, e.g., lodgepole pine and jack pine.
- Ž Contribute to an “edge effect,” providing a greater variety of food and shelter sources for wildlife.
- Ž Open up the habitat, generating new growth, diversity, and abundance of food plants, e.g., for large herbivores like moose.

The major purpose of this activity is for students to become familiar with positive and negative effects of fire (forest and grasslands) on wildlife species and their habitat.

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## **Presentation Conclusion**

If there is any area you have failed to cover, you may wish to do so at this point. By the end of the presentation, the students should have an understanding of the basic fire prevention concepts. You may wish to ask a few general questions to ensure the students have understood the main concepts.

At this point, you can answer any questions the students may have.

Thank the students for being attentive listeners.

### **Student/Teacher Handouts**

When a forester visits, they will usually bring a small token or handout for each student to remind them of the visit. Most students will show this to their parents. This encourages the students to talk to their parents about what they have learned and to bring the fire prevention message home.

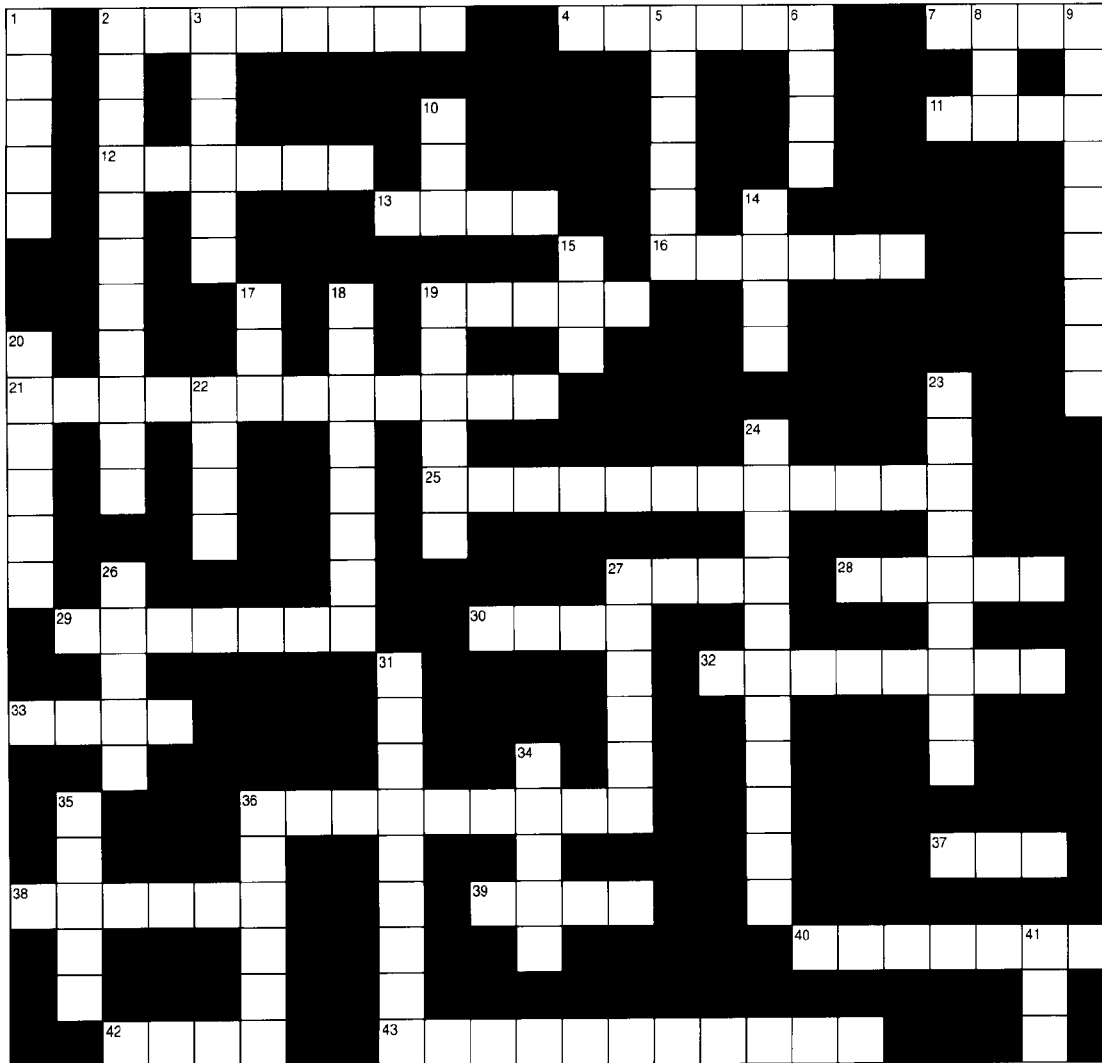
The number and types of handouts given to each child should be kept to a minimum. It has been found that when too many handouts are passed out, many are discarded.

### **Handouts**

The handout page following can be photocopied and handed out to students after any of these lessons. Contact your DNR Forester for a classroom poster.

# FOREST CROSSWORD

Use the clues to fill in the blanks of the crossword puzzle!



## ACROSS

2. Stone flame encirler
4. One color of fire
7. Weed & leaf remover to be used around your house
11. Shade-giver vulnerable to fire
12. Better than a "bucket brigade"
13. Often coiled in rest; should stretch to all parts of your home
16. Famous fire prevention symbol
19. "Arrester" which prevents fires, not crimes
21. "Hood" one can live in but not wear; can be made firesafe
25. Firefighting tool whose name describes what it does
27. Campers must not allow theirs to go out on its own
28. Firefighter's forest "clean-up"
29. Dangerous objects; to be handled ONLY by adults
30. Falling leaf season
32. Fireplace fuel; store it away from your house
33. Where dead branches shouldn't be; in relation to your roof (Ant. of below)
36. Dangerous as matches, with an explosive personality
37. "Only \_\_\_\_\_ can prevent forest fires!"
38. Troughs to collect water, not leaves
39. "Before" (+ st = answer to no. 36 down)
40. Opposite of "cause"
42. Fire radiates this
43. Surroundings, climate, atmosphere, etc. (ecosystem. earth)

## DOWN

1. An alarm to protect you from fire
2. Firefighter and engine abode
3. Smokey co-worker in forest protection
5. Once lost by a tree, shouldn't be left laying around
6. Describes both forest animals and the fire they flee from
8. Like us, fire needs this to survive
9. Kind of numbers that should be kept near the telephone
10. Number of exits every home needs, in case of fire
14. Flammable house frame material
15. Fire's favorite season (Syn. of "parched")
17. Baby Smokey
18. Without concern (Describes many fire starters)
19. Smokey carries one
20. Synonym of "creature" (can't start fires, but can be a victim of them)
22. Wildfires can strike here
23. Proper kind of container for barbeque coals
24. Conflagration combatant
26. Thirst and fire quencher
27. "Arms" of a fire
31. Should be firesafe before used
34. It burns everyone
35. Kind of person to tell if you find an out-of-control fire
36. Flammable tree gathering
41. Time you can begin helping Smokey