



**NJ Forest Fire
Service**

Wildfire Prevention Education

Lesson Plan # 4-A

Title/Topic: Curiosity or Fire Play ?

Group Level(s): Group 4

AE: 11 through 14 years old

Skills:

Never Play with matches or lighters; if found to give them to a grown up.

Learning Objective:

Students will be able to listen to a story and respond to questions.

Time: 30 minutes

Materials:

**The instructor reads the story scenario orally.
Blackboard if desired.**

Procedures:

**Recall the needs for fire (i.e. cook food; heat; etc)
Identify that if fire is not safe or supervised by an adult, fire can hurt others and us.
Identify why matches and lighters might used (i.e. to light a fireplace; candles on a birthday cake; etc.)
Record findings on board if desired.
Read story.
Identify the problem and how it was solved.**

Instructor's Explanation:

**Explain if adults do not use lighters and matches safely, they can be very dangerous also.
Children should never ever play or use matches.
Read following story scenario**

Scenario:

Sarah and Sophia were best friends. They enjoyed doing everything together. One day, Sarah went to Sophia's house to see if she wanted to go bike riding. Sophia said, "Okay." After riding for a while, Sophia and Sarah stopped near the woods. Sophia told



Sarah that she had some matches. She asked Sarah if she would help her make a campfire. When Sarah said she did not know how, Sophia said that she would teach her. First, the girls piled up some sticks and leaves, and then Sophia taught Sarah how to strike a match. After the fire got started, the wind blew some of the leaves into the woods. And a big fire got started. Sarah and Sophia got scared and quickly rode their bikes home.

Essential Closure Questions to be addressed by Instructor:

Can you name at least three things in this story that are not safe?

Playing with matches; making a campfire without an adult; leaving a fire without putting it out; or, not telling an adult what they had done.

Review:

Small brush fires can become big fires very quickly.

Brush and woods fires can destroy the homes of wildlife animals.

If you start a fire, you should tell an adult right away.

Matches and lighters are TOOLS, not toys.

Only adults should teach you how to use matches and lighters, not other kids.

PARENT INVOLVEMENT:

Parents must remove all matches and lighters from residence and show/give to instructor.

Parents will assist child (depending upon the age) in listing/numbering the items located.

Ongoing checks weekly will be necessary.

List several different ways matches and lighters are TOOLS.

NJCCCS:

[Visual and Performing Arts](#)

[Comprehensive Health and Physical Education 2.1; 2.2;](#)

[Language Arts Literacy 3.1; 3.4;](#)

[Mathematics](#)

[Science](#)

[Social Studies](#)

[World Languages](#)

[Technological Literacy](#)

[Career Education and Consumer, Family and Life Skills 9.2](#)

References/Resources:

Adapted from Fire Watch 2001



NJ Forest Fire Service

Wildfire Prevention Education

Lesson Plan # 4 - B

Title/Topic: **What is a Lookout Tower?**

Group Level(s): Group 4

AE: 11 through 14 years old

Skills:

Understand what a Lookout Tower is, and their importance to the Forest Fire Service.

Learning Objective:

Students will be able to understand the need for Lookout Towers in New Jersey.

Time: 45 minutes

Materials:

Maps of Northern New Jersey to refer to if necessary
Description of the towers below.
Surface to record on if necessary

Procedures:

Identify what a Lookout Tower is to class.
A tower in which a lookout for fires is posted.

Explain how Fire Towers (Look Out Towers) are needed as it can be difficult to locate a fire at ground level. There is a need for the persons in the surrounding towers to assist in determining an approximate location for the wildfire crewmembers on the ground. Fire Observers also act as a dispatch center.

Instructor's Explanation:

When a wildfire occurs, the first step in the process is a timely and accurate reporting of the fire's location. To accomplish this, the New Jersey Forest Fire Service maintains a system of 21 look out towers at strategic locations throughout the state. At least one tower in each division is operated whenever the woods are dry enough to burn and all towers are staffed during the months of March, April, May, October and November. Lookout towers continue to be effective and observers detect one half of



Cedar Bridge Lookout

all wildfires reported. The general public, aircraft pilots and wildfire patrols report the other half.

In addition, forest fire observers calculate and report fire danger ratings that are used to alert the general public and determine staffing levels for the Forest Fire Service's fire suppression operations.

Fire Towers are considered to be the "*Sentinels of the Ridge tops*" as they are raised well above the ground so that the "lookout" in the tower can relay coordinates to firefighters as to where they are seeing smoke.

All of New Jersey's lookouts are listed in the [National Historic Lookout Register](#).

Essential Closure Questions to be addressed by Instructor:

What is a Fire Tower? (A tower in which a lookout for fires is posted.)

Are Look Out Towers and Fire Towers the same? (yes)

Name one reason fire towers are necessary in fire fighting. (refer to above for accuracy)

NJCCCS:

[Visual and Performing Arts](#)

[Comprehensive Health and Physical Education 2.3](#)

[Language Arts Literacy 3.1; 3.2; 3.3; 3.4; 3.5;](#)

[Mathematics](#)

[Science 5.5; 5.8; 5.10](#)

[Social Studies 6.6](#)

[World Languages](#)

[Technological Literacy](#)

[Career Education and Consumer, Family and Life Skills](#)

References/Resources:

<http://www.section2wildfire.com/id8.html>

<http://www.firetower.org/>

<http://www.njwildfire.org>

Contact New Jersey Forest Fire Service to visit a local lookout tower.

Forest Fire Lookouts



Milton Lookout



Bearfort Lookout



Ramapo Lookout



Culvers Lookout



Catfish Lookout



Budd Lake Lookout



Greystone Lookout



Historic Lookout 1922



Osborne Fire Finder



NJ Forest Fire Service

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Lesson Plan # 4 - C

Title/Topic: Fire Danger Rating System

Group Level(s): Group 4

AE: Age 11 through 14 years old.

Skills: Recognize levels of fire danger



Learning Objective:

Students will be able to identify and interpret the varying levels of Fire Danger as indicated on Fire Danger Signs throughout the State of New Jersey.

Time: 45 minutes

Materials:

1. Chart (4-C) of Fire Ratings
2. Sample of NJ Forest Fire Sign on display throughout the state.
3. Define terms on board
 - a. **Crown** rise to tree tops
 - b. **Spotfire** disconnected small fires occurring ahead of the main fire
 - c. **Embers** hot fragments of fire
 - d. **Conifers** trees that bear cones
 - e. **Relative Humidity** The ratio of the amount of water vapor in the air at a specific temperature to the maximum amount that the air could hold at that temperature, expressed as a percentage.

Procedures:

1. Identify the five levels of fire danger.
2. Discuss what impacts the difference amongst the five levels. (i.e. weather, relative humidity...)
3. Provide students with Matching sheet (4-C)

Instructor's Explanation:

The instructor describes the vocabulary terms within the chart:

Extreme - Fires start readily from sparks or cigarette butts, spread and *crown* (rise to tree tops) rapidly. *Spot fires* (disconnected small fires occurring ahead of the main fire) are common. All burn fiercely and may *blow-up* (grow rapidly) unless controlled promptly.

Very High - Fires will start readily from match or glowing *embers* (hot fragments of fire) and spreads rapidly as it increases in size. May crown in young *conifers* (trees that bear cones).

High - Fires will start from a lighted match and spread rapidly in dry grass, slower with moisture. Will continue to spread until extinguished.

Moderate - Fires will start from open flame, camp or *brush fire* (fire in low vegetation). Spreads slowly.

Low - Fires will not spread beyond heat of campfire or brush fire.

Essential Closure Questions to be addressed by Instructor:

- 1. Name the five levels of Forest fire Danger.**
- 2. What is the purpose of warning the public of Fire Danger?**

NJCCCS:

[Visual and Performing Arts](#)

[Comprehensive Health and Physical Education](#)

[Language Arts Literacy 3.1, 3.3, 3.4, 3.5, 3.6](#)

[Mathematics](#)

[Science 5.7, 5.8,](#)

[Social Studies](#)

[World Languages](#)

[Technological Literacy](#)

[Career Education and Consumer, Family and Life Skills](#)

References/Resources:

www.njwildfire.org

Chart 4-C

Fire Danger Rating System	
Low	Fires will not spread beyond heat of campfire or brush fire.
Moderate	Fires will start from open flame, camp or brush fire. Spreads slowly.
High	Fires will start from a lighted match and spread rapidly in dry grass, slower with moisture. Will continue to spread until extinguished.
Very High	Fires will start readily from match or glowing embers, and spreads rapidly as it increases in size. May crown young conifers.
Extreme	Fires start readily from sparks or cigarette butts, spread and crown rapidly. Spot fires common. All burn fiercely and may blow up unless controlled promptly.

Name _____

Fire Danger Rating System
Matching Sheet

Directions:

Match the Ratings to their definitions.

RATINGS

DEFINITIONS

1. Extreme

___ a. Fires will Start from an open flame, camp or brush fire. Spreads slowly.

2. Very High

___ b. Fires will not spread beyond heat of the campfire or brush fire.

3. High

___ c. Fires will start readily from match or glowing embers and spreads rapidly as it increases in size. May crown young conifers.

4. Moderate

___ d. Fires start readily from sparks or cigarette butts, spread and crown rapidly. Spot fires common. All burn fiercely and may blow up unless controlled promptly.

5. Low

___ e. Fires will start from a lighted match and spread rapidly in dry grass, slower with moisture. Will continue to spread until extinguished.

(Answers: 1.D; 2.C; 3.E; 4.A; 5.B)



NJ Forest Fire Service

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Lesson Plan # 4 - D

Title/Topic: Aircraft for Fires?

Group Level(s): Group 4

AE: Age 11 through 14 years

Skills:

Identify the need for additional equipment for Wildland Firefighting.



Learning Objective:

Students will be able to recognize that in addition to the wildfire fighters' engines and tools, it may be necessary to fight a wildfire from the air with aircraft. Defines single engine air tankers.

Time: 30 minutes

Materials:

Following Information:

- 1. The aircraft, also called "AIR TANKERS" – single engine air tankers are used in New Jersey. These are planes with only one engine, fitted with tanks, provide direct support to firefighters on the ground by dropping up to several thousand gallons of water or chemical retardant ahead of an advancing wildfire.**
- 2. Internet access.**

Procedures:

- 1. Read through the text provided in lesson and go to the reference sites to view additional photos from sites.**
- 2. Discuss reasons why aircraft would be necessary for wildland firefighting.**
- 3. In Teams of two or three, the students will research a Wildfire where aircraft were employed. Use site:**
<http://www.njwildfire.org>

Instructor's Explanation:

The instructor is to facilitate the students in recognizing that at times it is difficult to extinguish or reduce a wildfire with equipment on the ground. Sometimes it is necessary to fight the fires from the air.

Essential Closure Questions to be addressed by Instructor:

- 1. When is it necessary to fight a fire from the air?**
- 2. Does the aircraft need assistance from the ground once it is utilized to assist put out a wildfire? (Yes, the crewmembers on ground are still needed.)**
- 3. Would you find it more or less dangerous to fly an aircraft over a fire? Why? Why Not?**

NJCCCS:

[Visual and Performing Arts](#)

[Comprehensive Health and Physical Education](#)

[Language Arts Literacy 3.1, 3.2, 3.3, 3.4, 3.5](#)

[Mathematics](#)

[Science 5.7, 5.8](#)

[Social Studies](#)

[World Languages](#)

[Technological Literacy](#)

[Career Education and Consumer, Family and Life Skills](#)

References/Resources:

<http://www.njwildfire.org>

http://www.smokeybear.com/tools_at.asp