

## LESSON PLAN

### Fire Ecology Zip Cards

#### **Mission Statement**

*Caritas Creek's mission is: to help young people discover the connection between all living things; to build bridges between diverse socio-economic and ethnic groups; and to foster in youth a deeper connection to the natural environment, to self, to the spirit of love, and to community.*

#### **How to use this Lesson Plan**

**State Standards** - 6th grade Ecology, Thermal Energy, & Resources, 8<sup>th</sup> grade Chemistry of Living Systems

**Grade** - 6th - 8th grade

**Learning Cycle** - concept invention, application

**Themes** - Change

**Time** - 20 minutes

#### **Objectives**

Students will:

1. Learn about the various causes of forest fires.
2. Discover the how forest fires affect animals and plants.
3. Realize the role humans play in fire ecology.
4. Use deductive reasoning and critical thinking to decide how their information fits into the activity.

#### **Materials**

Laminated Zip Cards

#### **Procedure**

1. Tone set –

(INVITATION) This is a good game to play on Thursday, as forest fires directly relate to the daily theme of change. Playing it in an area with some fire scarred trees could help to give a visual. Ask students to brainstorm a list of changes that might happen in a forest environment. Hopefully they will mention fire; if not, suggest it.

(EXPLORATION) Give them time to explore the area to search for evidence of fire. Explore the group's previous knowledge on the topic and explain that they will be doing an activity based on forest fires.

2. Procedure –

(CONCEPT INVENTION)

Have the campers sit in a Caritas Style circle.

Pass out one card to each student and provide time for them to read it over.

The student with card number one will begin by asking their question on the bottom the card.

Everyone will check their card to see if it answers the question just

posed. That one person will share the answer with the group. If a student mistakenly answers, redirect the group by asking who else thinks they have an answer that might work.

The answering student then asks their question, and so on.

The game ends when the group arrives back at card number one.

(APPLICATION) To reinforce the information, have the group play again to see how fast they can go around the group (hence the “zip” ping).

3. Debrief-

(REFLECTION)

What card was the most interesting to you? Why?

How do humans affect forest fires?

In what ways does fire affect the ecosystem of the forest?

What adaptations have plants and animals developed to protect them from fire?

Forest fires are sometimes perceived as a bad thing, even though they are very good for the forest. What else in life sometimes is mistakenly portrayed as a negative when it could be a positive?

### **Cabin Leader Role**

The cabin leader can help supervise exploration before the activity, assist in passing out the cards, actively participate in the game, and contribute to the debrief.

### **Variations**

This activity could very easily be tailored to many different concepts besides forest fire, such as the decomposition cycle, the water cycle, interdependence, metamorphosis, evolution, global climate change, adaptations, etc. by simply changing the cards to fit the topic.

### **Extensions**

Pre-activity: Change Thought Swap

Post-activity: How Bad Is Your Bark

# Call 911



What ingredients do you need to make fire?

1

- ① **Dropping cigarettes**
- ① **Letting off fireworks**
- ① **Firing guns**
- ① **Letting campfires get out of control**

How can I make sure that I don't start a wild fire?

2

**By growing thick bark and only having branches high up in the tree, where they won't be set alight by ground fires.**

How does fire help plants to grow?

3

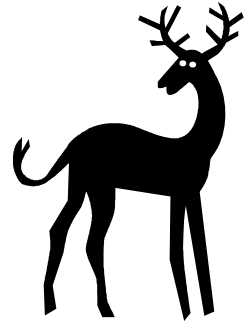
**When the weather is hot and dry.**



How do fires start naturally?

4

**Large animals run away, birds fly  
away, small animals hide  
underground and amphibians go  
under water.**



What is the difference between a ground fire and a  
crown fire?

5

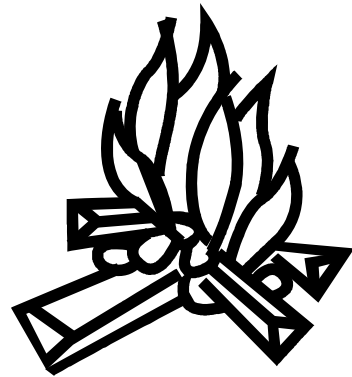
**Ground fires can ignite the lower  
branches of trees, which ignite the  
branches above them and so on until the  
fire reaches the tree tops.**

I just saw a park ranger lighting a fire. Is he crazy?

6

**Neither. Fire is a natural agent of change.**

How do trees prevent themselves from being burned?



7

**It makes the ground more fertile so the seeds can grow.**



How do animals avoid getting burned in forest fires?

8

**By clearing brush and dry grass from your roof and yard.**



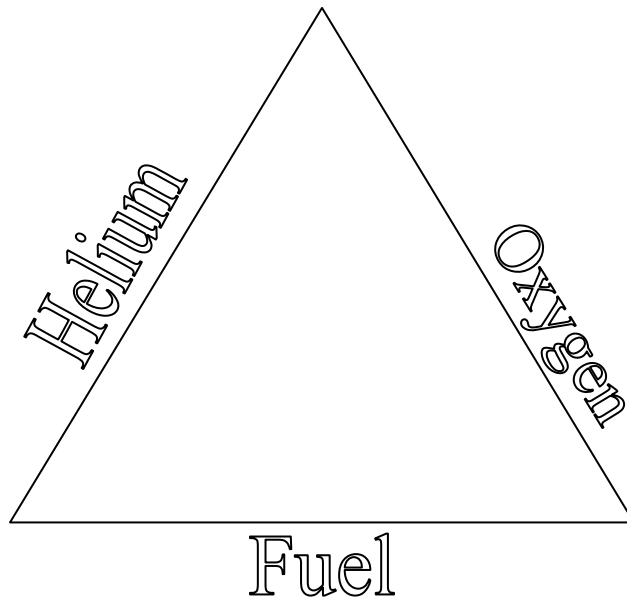
What should you do if you see a fire?

9

**A ground fire only burns material on the ground and moves slowly. A crown fire burns in the tops of the trees and can move very quickly.**

How can a ground fire turn into a crown fire?

10



When do most fires start?

11

**Only when they were started by humans or when they pose a threat to human life or property. Otherwise, they let them burn.**

How can I protect my house from wildfires?

12



**Fires are started naturally by volcanic eruptions and lightning.**



How can humans accidentally start fires?

13

**Only light a fire in a fire ring. Make sure it's completely out before you leave it. Leave fireworks to professionals.**

Are forest fires good or evil?

14

**It transforms dead vegetation into nutrient- rich ash. It creates holes in the forest canopy, which allow sunlight through.**

How does fire help Giant Sequoia trees reproduce?

15

**Not necessarily. The National Park Service lights small, controlled fires to release nutrients, reduce the amount of fuel in the forest and therefore reduce the risk of a wild fire.**

When does the National Park Service put out fires?

16

### Instructions:

1. Give a card to each student.
2. Have the student with card number one ask their question.
3. One student has the correct answer. They read their answer. Discuss the answers with the group to make sure that everyone understands.
4. The answering student then asks their question, and so on.
5. The game ends when you get back to card number one.
6. Once you've played once, play again and see how fast you can go around the group.

### Cheat Sheet

Question	Answer	Question	Answer
1	11	9	1
2	14	10	6
3	15	11	4
4	13	12	9
5	10	13	2
6	16	14	7
7	3	15	8
8	5	16	12