For students & educators

Camp Fire
MINNESOTA

My nature connection

WILDFIRE

GRADE: 5-12
TIME: 20-30 min

FOLLOW ALONG TO LEARN ALL THE ANSWERS TO YOUR BURNING QUESTIONS

WHAT YOU'LL NEED

Pen or Pencil

Wildfire Wiz Crossword

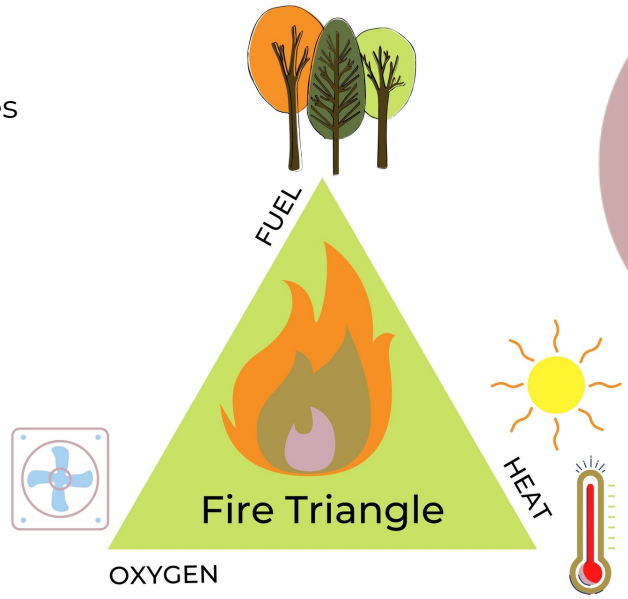
Optional: This lesson provides a URL link to complete the crossword online.

ACTIVITY

INTRODUCTION

Wildfires— also known as wildland or forest fires—are large fires that burn natural landscapes like forests and grasslands. Have you ever wondered how a fire starts? We can use the fire triangle to understand the three parts that work together to make small campfires and enormous blazes. These include:

1. **FUEL**: Dead or living trees, brush, grasses and even buildings are some examples
2. **OXYGEN**: This is the air we breathe and is all around us. Fires burn quick and spans across vast areas of land, especially windy days.
3. **HEAT**: Heat comes in many forms. Most wildfires occur during summer, the hottest season of the year. Fires can also start because of other sources of heat in nature.

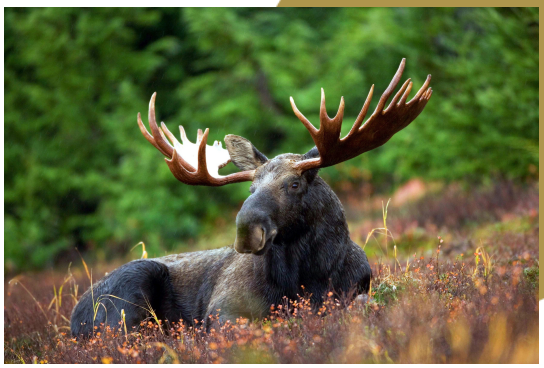


The leading natural cause of wildfires is lightening, which can be five times hotter than the sun's surface— that's 50,000 degrees Fahrenheit! If we remove even one of the sides of the triangle, a fire will eventually go out.

STUDENTS WILL:
Learn about the history, causes, and ways nature benefits from wildfire

SETTING:
A comfortable spot to complete the crossword on paper or online

NATURE BENEFITS FROM FIRE



Fire is both a natural and beneficial process in ecosystems and certain species even rely on wildfire for survival. When a fire burns through the forest, it removes brush (fuel) and creates space for new tree and plant species to grow. Species like the Jack Pine need the heat from fire to opens up their cones and allow their seeds to spread. These new species also help attract many different kinds of diverse wildlife like deer, moose and rabbits.

HUMANS AND WILDFIRE

Humans are the leading cause of wildfires and are responsible for starting roughly 85% of the wildfires that burn each year.
What do you think is the most common way that humans cause wildfires?

- **UNATTENDED CAMPFIRES:** This is when someone leaves behind a campfire while the coals are still hot. Remember to dump plenty of water on a campfire when leaving a picnic area or campsite!

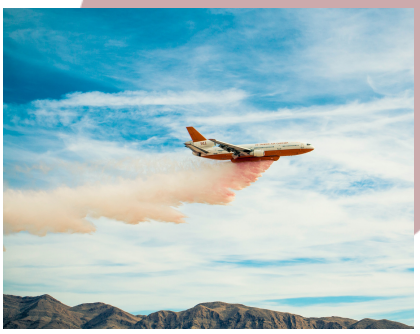
Fire is a much bigger challenge for humans because it can destroy homes and entire towns if not controlled. The largest fire in U.S. history—the Great Peshtigo Fire — happened in our own neighboring state of Wisconsin in 1871. Today, the western United States is covered in forest land and in California—the state with the most wildfire each year—almost 2 million acres burned in 2018.

In 1944, Smokey Bear became the Forest Service's symbol for wildfire prevention. His slogan is, "Only YOU can prevent forest fires."

PREVENTION

Many Native American tribes saw the benefits of wildfire for plants and animals, and practiced controlled burns on their land for hundreds of years before the colonists in America arrived. This is a practice where people start small, intentional fires to support ecosystem growth and prevent larger, unexpected wildfires later. When Native people were forced to relocate, they could no longer maintain the land with controlled burns. Many people who weren't as connected with the land began to avoid burning all together. We still see the impacts of this today in uncontrollable fires. Many scientists are learning from this history, returning to using their practice, and finding a healthy balance with fire.

WILDLAND FIREFIGHTERS



Today, wildland firefighters are working hard to prevent and put out fires. Some of the ways they do this are by dumping water or dirt on flames, and digging huge lines in the fuel called firebreaks to keep flames from spreading. One of the neatest but most challenging jobs is done by the smokejumpers. These folks are trained put out fires in remote areas by jumping out of cargo planes with parachutes!

CONNECTING WITH QUESTIONS

One of the ways that we manage fire is through controlled burning, originally practiced by Native American tribes before colonization. What are some other ways that scientists have been influenced by Native American communities? Consider doing some research on agriculture, medicine, astronomy, etc.

With a partner, discuss some action steps that you can take to prevent wildfires from starting in your local area. How can we learn from past mistakes? Consider researching some of the ways that larger fires have been started by humans.

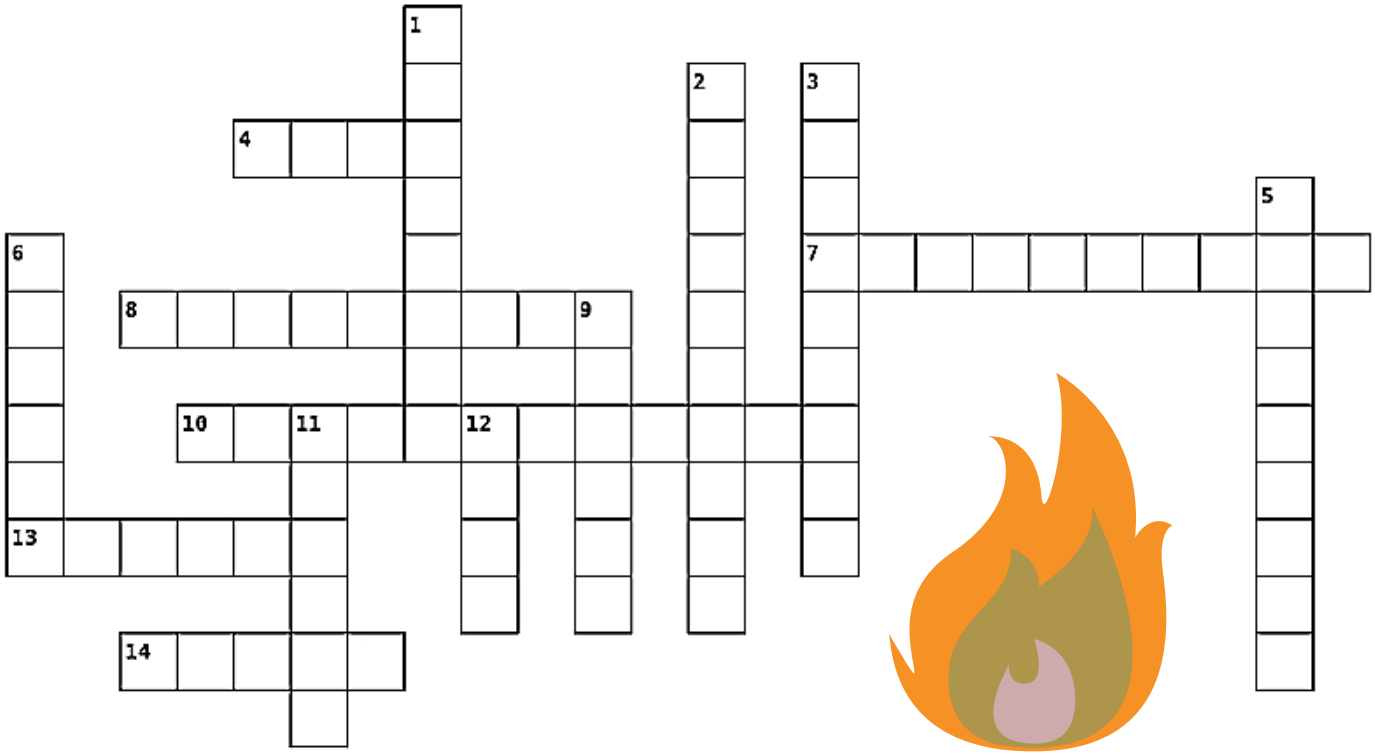
If you had to opportunity to work as a wildland firefighter would you take it? Why or why not?

WILDFIRE WIZ

Now that you've read all about wildfires, test your knowledge by doing the crossword puzzle below. Discover how much you remember and then go back and check your answers from the reading.

You will find an answer key at the end of the PDF.

WILDFIRE WIZ



DOWN:

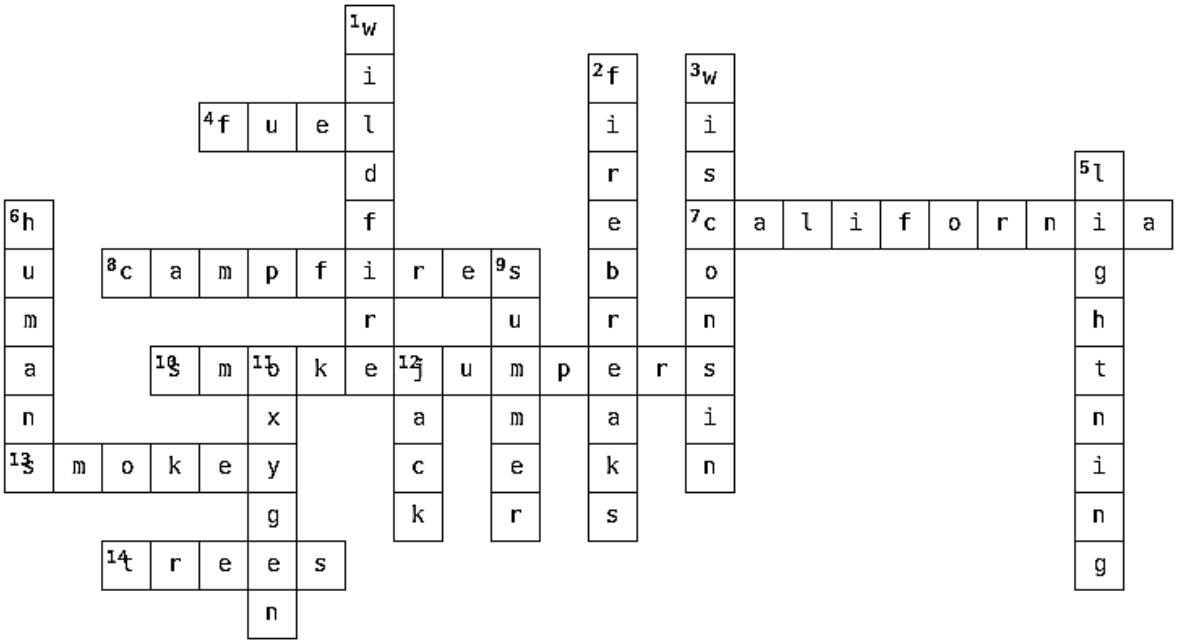
1. This is a large fire that spreads through woodlands and brush.
2. When putting out fires, wildland firefighters remove fuel by digging large lines in the forest called...
3. The largest wildfire in U.S history—The Great Peshtigo Fire—happened in this state in 1871.
5. This is the leading NATURAL cause of wildfires.
6. 85% of wildfires are caused by...
9. Most fires happen during this season.
11. The three elements in the fire triangle include heat, fuel and...
12. This pine tree needs fire to open its pine cones and release seeds for reproduction.

ACROSS:

4. This element of the fire triangle includes trees, brush, needles, leaves and grasses.
7. The U.S. state with the most wildfires each year is...
8. This is a common HUMAN cause of wildfires when unattended while camping.
10. These firefighters travel to fires using parachutes and jumping out of cargo planes.
13. This character is know for the slogan, "Only you can prevent wildfires."
14. Some of the benefits of wildfires are adding nutrients to the soil and making room for more of these to grow.

Find the online version of the crossword here: https://crosswordlabs.com/view/wildfire-whiz-5

ANSWER KEY: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EDUCATION STANDARDS

Social Emotional Learning Competency:

Grade Level	Science Education Standard
Grade 5	5.1.3.2.1 Describe how science and engineering influence and are influenced by local traditions and beliefs.
Grade 6	6.1.2.1.4 Explain the importance of learning from past failures, in order to inform future designs of similar products or systems.
Grade 7	7.4.2.1.3 Explain how the number of populations an ecosystem can support depends on the biotic resources available as well as abiotic factors such as amount of light and water, temperature range and soil composition.
Grade 8	8.1.3.2.1 Describe examples of important contributions to the advancement of science, engineering and technology made by individuals representing different groups and cultures at different times in history.
Grades 9-12	9.1.3.1.2 Identify properties of a system that are different from those of its parts but appear because of the interaction of those parts.