



21. Revisiting Wildland Fire in the Sierra Nevada

Use this activity only if you used Activity M01, “Visiting Wildland Fire in the Sierra Nevada.”

Lesson overview: Students return to the presentation that they viewed in **Activity M01**, at the start of their study of wildland fire (*E01_M01_VisitingWildlandFire.pptx*). This time, they narrate the presentation themselves. Then they compare and contrast their current feelings about wildland fire with their earlier ones. Finally, they assess the difficulty of a fire manager’s job.

Subjects: Science, Writing, Speaking and Listening, Arts

Duration: one half-hour session

Group size: Whole class

Setting: Indoors

New FireWorks vocabulary:
fire manager

Goals: Reinforce students’ knowledge about wildland fire behavior, effects, and management. Demonstrate to students how much they have learned. Demonstrate that learning can affect feelings, and that feelings about a complex issue can change over time.

Objectives: Given a series of photos in a presentation...

- Students can narrate the presentation, describing different kinds of fire behavior and relationships between fire and ecosystems.
- Students can articulate and compare/contrast their feelings about wildland fire.
- Students can describe some of the challenges facing wildland fire managers and assess the difficulty of the job.

Standards:		6th	7th	8th
Common Core ELA	Writing	1,3,10	1,3,10	1,3,10
	Speaking and Listening	1,4,6	1,4,6	1,4,6
	Science and Technology	8	8	8
NGSS	Interdependent Relationships in Ecosystems	LS2.A,LS2.C,LS4.D		
	Human Impacts	ESS3.B,C		
	Weather and Climate	ESS2.C		
	Matter and Energy in Organisms and Ecosystems	LS2.C,B		
	Natural Selection and Adaptation	LS4.C		
	History of Earth	ESS2.A		
EEEEGL	Strand 1	A,C,E,F,G		

Materials and preparation:

- Find the flipchart with questions that students asked about fire in **Activity M01. Visiting Wildland Fire in the Sierra Nevada**. Post it in the classroom.
- Find each student's earlier copy of **Handout M01-1**
- Make 1 copy/student of **Handout M21-1: Final Fire Drawings**
- Provide computer access for students (1 per every 2-3 students), and download ***E01_M01_VisitingWildlandFire.pptx*** on each computer, in "slide show" mode. If you don't have access to multiple computers, you can do this activity with the full class, rather than in small groups.

Procedure:

1. Group the students into teams of 2-3, where each team has a computer with ***E01_M01_VisitingWildlandFire.pptx*** loaded, ready to go in "slide show" mode (students should not look at the notes).
2. Give each student a copy of **Handout M21-1: Final Fire Drawings**.
3. Explain: You will work in teams to view the same presentation that you saw when we first began studying wildland fire. As you go through the slides:
 - Stop at each slide and discuss what it shows. You can explain the slides now because you have learned about everything that is shown here.
 - At slides 1, 8, 14, and 21, stop to draw the fire behavior and label it with the correct term.
 - Try to answer the questions on the flipchart (posted in the classroom). These came up at the start of our fire study. If we can't answer them, we'll talk about ways to get the answers.
 - When you finish the presentation, answer the questions at the bottom of the handout.
4. After the small group activity, go through the slideshow with the class. (Slides and narrative from **Activity M01** are shown below.) Ask a different group of students to explain each slide.
5. Ask for answers to the questions on the flipchart. If you don't have answers, discuss how you might get them (from further research? by asking a fire management professional?)
6. Ask/discuss: Now that you know a lot about wildland fire, what do you think a fire manager's job is like?

Assessment:

1. Return students' copies of **Handout M01-1: Fire Drawings**.
2. Explain: Read the "fire feelings" that you wrote when we began our study of wildland fire – the answer to Question 3 on the old handout. Then write a paragraph in which you compare and contrast your current feelings with your initial feelings. Give at least three specific examples of how your feelings of wildland fire have or have not changed. Explain why.
3. Write a paragraph to answer this question: How difficult is the job of managing wildland fire? Explain by giving at least 3 specific examples of things a fire manager has to do.

Evaluation:	Full Credit	Partial Credit	Less than Partial Credit
Small Group Discussion	-Student actively and frequently participated and listened during discussion. -Student gave others a chance to speak.	-Student gave a few contributions to the discussion. -Student was actively listening.	-Student did not contribute. -Student was not listening or was distracting others.
Class Discussion	-Student contributed at least once during the large group discussion. -Student was actively listening.	-Student did not contribute to large group discussion but was actively listening.	-Student did not contribute and was not listening or was distracting others.
Writing Assignment - feelings	-Student wrote a complete paragraph that clearly compared/contrasted feelings. -Student provided 3 examples.	-Student wrote an incomplete paragraph that compared/contrasted feelings. -Students provided 2 examples.	-Student wrote a poorly structured paragraph. -Student provided 0-1 example.
Writing Assignment – difficulty of fire management	-Student wrote a complete paragraph that answered the question. -Student provided 3 valid examples.	-Student wrote an incomplete paragraph or did not answer the question. -Students provided 2 valid examples.	-Student wrote a poorly structured paragraph or did not answer the question. -Student provided 0-1 valid example.

Slides and Narrative for E01_M01_VisitingWildlandFire.pptx

Slide 1



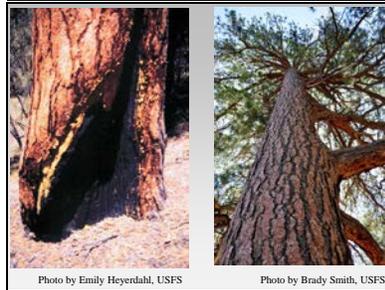
Here is a fire burning in a forest of the Sierra Nevada.

Slide 2



This is what the land looks like after that kind of fire.

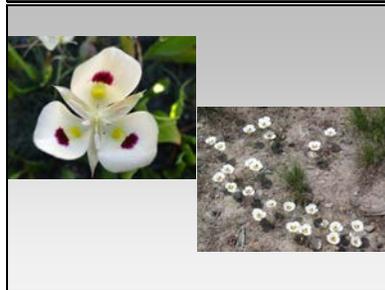
Slide 3



Here are some plants that live in the forest after fire:

... A ponderosa pine tree that has survived many fires

Slide 4



... Mariposa lily, a wildflower that survives fire and then grows really well.

Slide 5



... A California black oak that sprouts after fire.

Slide 6



Here are some animals that live in the forest after fire:

... Pileated woodpecker, which loves big, old trees that have survived fires long ago.

Slide 7



... Western gray squirrels that eat the seeds of trees that have survived the fire.

Slide 8



Here is another kind of fire in the Sierra Nevada.

Slide 9



This is what the land looks like after that kind of fire.

Slide 10



Or this.

Slide 11



Here are some plants and animals that thrive after that kind of fire:

... A beetle with heat sensors, so it can find fires and lay its eggs in just-burned trees.

Slide 12



... A black-backed woodpecker, which arrives soon after the fire to eat the beetles.

Slide 13



... Deer brush, whose seeds germinate after fire cracks open its hard seedcoats.

Slide 14



Here is another kind of fire in the Sierra Nevada.

This is a mixture of the two kinds of fire you've already observed. Many of those plants and animals can live here after fire.

Slide 15



Fire behavior and fire effects vary with topography, weather, and vegetation. Here are examples of fire behavior fires in the Sierra Nevada.

Slide 16



Photo by Michael Yager

Slide 17



Photo by Michael Yager

Slide 18



Photo by Michael Yager

Slide 19



Photo by Michael Yager

Slide 20



Photo by Michael Yager

Slide 21



Fires in our forests can burn for a long time after the flames have passed. They may burn in tree trunks, roots, or in the soil itself.

Here is what a fire may look like after most of the flames have moved on (left photo). *Observe and sketch it (D).*

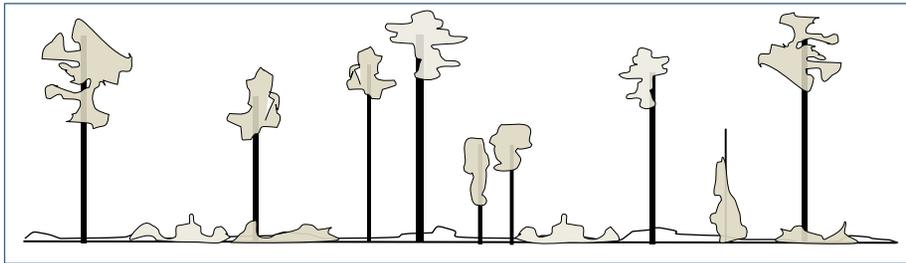
Wildland fires cause changes that last a long time, sometimes for hundreds of years. We'll learn more about all kinds of fire in the activities to come.

Handout M21-1: Final Fire Drawings.

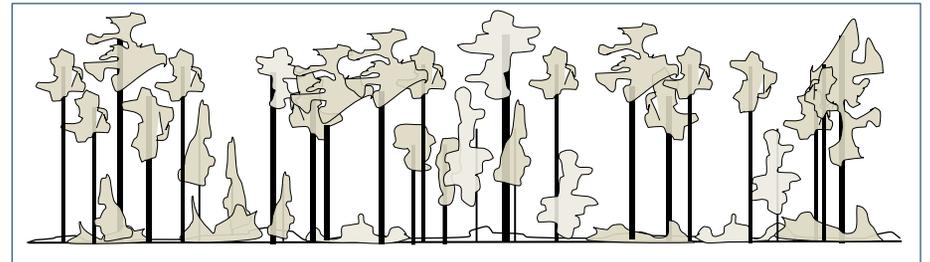
Name _____

1. Color each sketch to show what part of the forest is burning (for example, soil, surface plants, or tree tops). Label the sketch with the kind of fire shown.

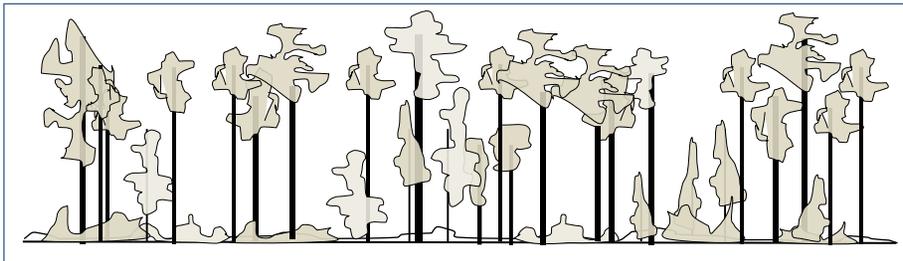
A. Slide 1. Kind of fire: _____



C. Slide 14. Kind of fire: _____



B. Slide 8. Kind of fire: _____



D. Slide 21. Kind of fire: _____

