



Informative Writing Performance Task

Teacher Version

Grade	5	Title/Subject	Effects of Wildfires on Ecosystems
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The following sections are included in this Teacher Version:

- Overview
- Process: Day 1 and 2
- Teacher Directions for Scoring Rubric
- Student Directions and Articles

Overview

On Day 1 students will engage in a video viewing and a shared reading and note-taking activity using two informative texts to learn about the effects of wildfires on ecosystems. After the group activity, they will be directed to plan, and begin to draft an informative writing piece about wildfires and ecosystems utilizing the information they read in the texts as well as notes they took during the shared lesson. On Day 2 students will finish their drafts, revise and edit their writing, and if they choose, produce a final copy.

Process

DAY 1: Video Viewing, Shared Reading and Note-taking: Up to 80 minutes

Step 1: Connect to Background Knowledge ~ 5 minutes

Provide an introduction to the classroom activity by indicating that after this activity, students will be writing an essay focused on the topic of the effect of wildfires on ecosystems. Ask students to share orally what they might know about effect of wildfires on ecosystems. Possible questions could include:

“Do you know what happens to animal and plants life in a wildfire? Are fires good or bad for an ecosystem?” Why?

For active engagement encourage pair or group sharing, before sharing out with whole group.

Step 2: Accessing the Information ~ 35 minutes

1. Explain: *“Now we will view a video and read two sources about the effects of fires on an ecosystem.” Show the video and read both sources, pointing out important facts and features (pictures, captions, etc.) Use ONLY the sources provided in this prompt packet.*
2. Lead a whole class discussion about the sources, during which students generate a key word list, list the “gist” next to each paragraph, highlight important words/phrases, or participate in pictorial narrative input (large teacher-created drawing with labels).
3. Think-Pair-Share: *“Tell your partner what you learned about the effect of wildfires on an ecosystem.” Make sure both partners have time to share with each other.*



Have the class watch one of these videos on wildfires and ecosystems:

<http://video.nationalgeographic.com/video/yosemite-sequoias-fire>

(sequoia wildfires) about 3 minutes

<http://video.nationalgeographic.com/video/ng-adventure/adv-american-adventures-fighting-wildfires>



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(adventure of firefighting) about 2.5 minutes

Step 3: Clarify Expectations for the Writing Task: ~ 5 minutes

Explain: *“In a few minutes you will have a chance to look at the sources, plan, and write a draft to explain to me what you learned about wildfires and ecosystems. Tomorrow you will have a chance to change and edit your work from today to write a final revision.”*

Review the student directions and checklist for the writing assignment and give each student a sheet of blank paper for planning and lined paper for writing.

Step 4: Writing: ~ 35 minutes

Tell students to begin planning their writing on the blank sheet of paper. You can remind them of planning strategies you have taught in your classroom such as outlining, lists, webs, or drawing. Don't provide a plan yourself just remind them of the strategies for planning.

After 10 minutes, suggest to students that they begin writing their drafts.

Collect all materials from Day 1 after the 40 minutes total is complete.

DAY 2: Revising and Editing Up to 60 minutes

1. Allow students to access the sources, their notes, the classroom activity charts/key word lists, and their draft.
2. Students read the prompt and their draft from Day 1 to make revisions.
3. Students edit and write final revision of essay. Provide additional lined paper for revisions and final copies as needed. Students may have time to create a final copy, or may revise and edit from their draft as time allows.
4. At teacher discretion, students may use word processing for draft or revision as long as spelling and grammar correction tools have been disabled.
5. Inform students when 15 minutes remain.
6. Collect all student writing materials.

Teacher Directions for Scoring Rubric:

Student responses to Part 2 will be scored using the Common Core based Informative/Explanatory Writing Rubric. A score will be given in each of the three rubric categories. For grades 3-6, student **revisions** will be scored.

Each student's final scores should indicate a 1, 2, 3, or 4 in each of the three categories (no partial scores such as 2.5, 3+, etc.). A score of 3 or 4 in each category is considered a passing score and a total of 8 points or higher out of 12 total is considered a passing overall score.

The score for each of the three categories will be entered for each student into School City.



Informative Writing Performance Task

Grade		5		Informative/Explanatory Writing Rubric	
Level	INFORMATIVE/EXPLANATORY WRITING		LANGUAGE CONVENTIONS		WITH GUIDANCE and SUPPORT FROM ADULTS
4 Exceeds	<ul style="list-style-type: none"> <input type="checkbox"/> Meets all expectations in level 3 <input type="checkbox"/> Uses strategies such as definition, classification, to organize ideas <input type="checkbox"/> Both introduction and conclusion are clear and well stated <input type="checkbox"/> Establishes and maintains a formal style 		<p>Mostly correct use of language conventions, and some above grade level skills used, for example:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Meets all expectations in level 3 <input type="checkbox"/> Varies sentence patterns for meaning, interest, and style <input type="checkbox"/> Maintains consistency in style and tone 		<p>Guidance & Support</p> <p>Level of guidance and support from adults before writing:</p> <p>Check off what was done before the student wrote the piece being scored.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Discussion <input type="checkbox"/> Read aloud or shared reading <input type="checkbox"/> Drawing <input type="checkbox"/> Vocabulary word bank <input type="checkbox"/> Shared or interactive writing <input type="checkbox"/> Graphic organizer <input type="checkbox"/> Language frames
	3 Meets	<p>INFORMATIVE/EXPLANATORY WRITING (W2)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Introduces topic clearly and groups related information logically (W2a) <input type="checkbox"/> Includes formatting (headings), illustrations/multimedia if they aid comprehension (W2a) <input type="checkbox"/> Develops topic with facts, definitions, concrete details, quotations, other related information and examples (W2b) <input type="checkbox"/> Links ideas with categories of information using words/phrases such as <i>in contrast</i>, <i>especially</i> (W2c) <input type="checkbox"/> Uses precise language and domain-specific vocabulary to inform or explain the topic (W2d) <input type="checkbox"/> Provides a concluding statement or section related to information/explanation presented (W2d) <hr/> <p>WRITING PROCESS (W4-W8)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Uses clear and coherent writing in multi-paragraph texts that is appropriate to task, purpose, and audience (W4) <input type="checkbox"/> WGASFA* Develops and strengthens writing by planning, revising, editing, rewriting, or trying a new approach (W5) <input type="checkbox"/> WGASFA* Uses a variety of digital tools to write and publish writing (W6) <input type="checkbox"/> Keyboards/types a minimum of two pages in a single sitting (W6) <input type="checkbox"/> Participates in shared research projects that build knowledge through investigation of different aspects of a topic. (W7) <input type="checkbox"/> Summarizes or paraphrases information in notes and finished work, and provides a list of sources (W8) 		<p>Adequate use of correct sentence formation, punctuation, capitalization, grammar usage and spelling for grade level, for example:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Uses verb tenses to show time, states, conditions; and uses noun-verb agreement correctly most of the time (L1) <input type="checkbox"/> Uses punctuation to separate items in a series (L2a) <input type="checkbox"/> Uses a comma to separate an introductory element from the rest of the sentence (L2b) <input type="checkbox"/> Uses a comma to set off the words yes and no, to set off a tag question, and to indicate direct address (L2c) <input type="checkbox"/> Uses underlining, quotation marks, or italics to indicate titles of works (L2d) <input type="checkbox"/> Spells grade-appropriate words correctly, consulting references as needed (L2e) 	
2 Almost Meets		<ul style="list-style-type: none"> <input type="checkbox"/> Introduces topic and includes information, but development of facts and details is limited <input type="checkbox"/> May not write multi-paragraphs <input type="checkbox"/> Uses some linking words/phrases, and limited vocabulary choice <input type="checkbox"/> Has incomplete or minimal planning for writing 		<p>Limited use of correct sentence formation, punctuation, capitalization, grammar usage and spelling for grade level, for example:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Uses verb tenses correctly some of the time. <input type="checkbox"/> Uses some punctuation correctly <input type="checkbox"/> Uses some sentence variety correctly <input type="checkbox"/> Spells many words correctly 	
	1 Does Not Meet	<ul style="list-style-type: none"> <input type="checkbox"/> Introduces topic and includes few details or facts <input type="checkbox"/> Copies sentences directly from text in articles in prompt <input type="checkbox"/> Writes only single paragraph <input type="checkbox"/> Has vocabulary that is simple and not aligned with topic <input type="checkbox"/> Has little or no planning evident 		<p>Infrequent use of correct sentence formation, punctuation, capitalization, grammar usage and spelling for grade level, for example:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Writes few complete sentences or only simple sentences <input type="checkbox"/> Has many errors in punctuation <input type="checkbox"/> Has many errors in spelling and/or capitalization 	

• **WGASFA:** “with guidance and support from adults”

This rubric was adapted from rubrics at sbusd.org and information from Smarter Balanced Assessments (www.smarterbalanced.org) using the California Common Core Standards at www.cde.ca.gov.



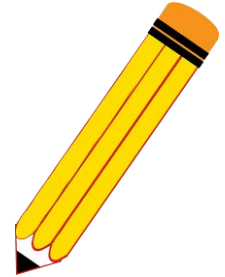


Informative Writing Performance Task

Student Version			
Grade	5	Title/Subject	Effects of Wildfires on Ecosystems

Student Prompt:

As you think about what you just read, then write a multiparagraph essay to explain to your teacher what you learned about.



Writing Tips:

- Be sure to introduce the topic and group related facts together.
- Use facts from the two sources to develop your ideas.
- You may want to include definitions and illustrations to help your teacher clearly understand what you learned.
- End with a conclusion.

Reminders:

- You can look at the sources and your key word list to help you with your writing.
- You might begin by making a plan or drawing a graphic organizer help you with your thinking.
- Do not copy sentences from the sources.

Step 1: Plan

Plan: review the texts and your notes

- Make a plan on the blank paper for your writing.

Step 2: Draft

- Write a topic sentence with your main idea.
- Write sentences with several facts, definitions, and concrete details to develop points.
- Group information together as you write.
- Use linking words such as *also*, *another*, *and*, *more*, *but*, *another*, *for example*, *because*, *in contrast*, *especially* to connect ideas.
- Use precise language and domain-specific vocabulary to inform or explain your topic.
- Write a concluding sentence or paragraph.
- Provide a list of sources.



Informative/Explanatory Writing Performance Task

Student Version			
Grade	5	Title/Subject	Effects of Wildfires on Ecosystems

Step 3: Reread and Revise

Reread your writing and revise:

- Does it make sense?
- Have you used science words from the text?
- Is there missing information you want to add?

Step 4: Edit

Reread your writing and revise:

- Capitals at the beginning of sentences
- Capitals for proper nouns, holidays, titles, etc.
- Punctuation: (end points) . ! ?
- Commas , quotation marks " "
- Spelling
- Complete sentences (avoid fragments and run-ons)
- Use verb tenses to show time, states, and conditions
- Use underlining, quotation marks or italics to indicate titles of works

Step 5: Final Draft

- Recopy and fix your mistakes.

Good work!





Informative/Explanatory Writing Performance Task

Student Reading Text

Grade	5	Title/Subject	Effects of Wildfires on Ecosystems – Article 1
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National Park Service

Fire Ecology and Monitoring

http://www.nps.gov/yose/parkmgmt/ecology_and_monitoring.htm



Visitors to the Grizzly Giant in the Mariposa Grove of Giant Sequoias may also experience a prescribed fire. Fire helps encourage giant sequoia germination.

Wildland fire is a natural process--it is an agent of change, not of good or evil. Many disturbance forces, including fires, floods, and earthquakes promote changes and have an impact in an ecosystem.

"Fire ecology" is a branch of ecology that studies the origins of wildland fire and its relationship to the living and nonliving environment. There are three main areas of study within fire ecology: fire dependence, fire history, and fire regime.

Fire dependence

Beginning in the 1930s, researchers began to study the effects of fire in the wilderness. They believed that fire was essential to many plant and animal communities. Fire dependence refers to plants and animals that are adapted to and rely on the effects of fire to survive.

Fire history

Fire history is used to show how often fire occurs in a given area. Each year a tree adds a layer of cells, increasing the width of its trunk, and in the process, records fire history and climate. When a fire passes through a forest, trees may get scorched. A layer of charcoal remains on a living tree and, in time, is covered by a layer of new growth, creating fire scars. These fire scars provide a record that researchers can use to determine when a fire occurred in specific areas of a forest.



Informative/Explanatory Writing Performance Task

Student Reading Text			
Grade	5	Title/Subject	Effects of Wildfires on Ecosystems – Article 1 continued

Fire regime

A "Fire regime" refers to the role fire plays in an ecosystem. It is defined according to fire characteristics such as intensity, frequency, severity, season, extent, duration, behavior, spatial distribution, and type of fire. There are eight major different vegetation communities in Yosemite, all of which have a different fire regime and have adapted to fires that have occurred for at least the last several thousand years. Though many species rely on fire for their regeneration, the timing and severity of fires varies greatly depending on weather and topography. The goal to better understand fire regimes is part of our fire management program.



Yosemite firefighter gathers weather data.

Fire Effects and Fire Monitoring

Yosemite's fire effects monitoring program studies the effects of fire and mechanical thinning on vegetation and fuels. Research plots are placed in prescribed burn, wildlife fire use, and mechanical treatment units prior to a fire or project. These plots are then studied after the burn or treatment to see what the ecological effects are. By monitoring the changes in vegetation during a prescribed burn, the prescription can be adjusted, if necessary, to achieve the desired results. By doing research such as this, we can learn if we are meeting fire management objectives.



Student Reading Text			
Grade	5	Title/Subject	Effects of Wildfires on Ecosystems – Article 2



<http://news.nationalgeographic.com/news/2013/08/130826-giant-sequoias-yosemite-rim-fire-forestry-science/>

How Sequoias Survive Wildfires, in Yosemite and Beyond

As the Rim Fire menaces Yosemite, a tree expert explains how the big trees survive.



A controlled wildfire in California illuminates giant sequoia trees. Photograph by Raymond Gehman, National Geographic Stock

[National Geographic](#)

Published August 26, 2013

Brian Clark Howard

As the [Rim Fire rages in and around Yosemite National Park](#), biologists have taken steps to protect two groves of giant sequoia trees. One tree expert suspects, however, that the measures have more to do with public relations than with sound forest policy.



Informative/Explanatory Writing Performance Task

Student Reading Text			
Grade	5	Title/Subject	Effects of Wildfires on Ecosystems – Article 2 continued

The Rim Fire has burned for nine days, razing 134,000 acres, which makes it one of the biggest blazes in California's history. The flames have largely been confined to Yosemite's remote northwestern section, about 20 miles (32 kilometers) from the iconic Yosemite Valley.

The fire has not yet reached the two groves of giant sequoias in the park, small enclaves called the Tuolumne Grove and Merced Grove. But rangers have taken the precaution of placing sprinklers around those big trees.

"These two groves are precious resources that the public is concerned about, and rightly so, because they are amazing," [Stephen C. Sillett](#) told National Geographic. Sillett is an ecologist with Humboldt State University who specializes in tall trees. He has received grants from the National Geographic Society to study the giants in Sequoia National Park.

But Sillett said placing sprinklers around the sequoias in Yosemite isn't really necessary. "The main thing they are doing with sprinklers is appeasing the public, who are worrying about how ugly the area will look when they visit later and that some trees are going to die," he said.

"The big trees are going to be fine," Sillett explained. "Smaller, weaker, non-giant sequoias will die, but it's not so much that they are protecting the trees."

Sillett said full-grown sequoias are adapted to survive even the hottest wildfires. They have fibrous, fire-resistant bark that can grow up to two feet thick. Although fires can damage the biggest trees, they usually don't kill them.

Giant sequoias are the world's largest single trees by volume. They reach an average height of 160 to 279 feet (50 to 85 meters) and average diameter of 20 to 26 feet (6 to 8 meters). Record trees have been identified at 311 feet (94.8 meters) and 56 feet (17 meters) in diameter. The oldest known giant sequoia is estimated at 3,500 years old.

Uneven Management

Sequoia management is all over the map, says Sillett. The giant trees live in about 70 groves that are spread along the western slopes of the Sierra Nevada.

Some of those trees live in national parks, where the Park Service often conducts occasional controlled burns to reduce the buildup of dead material that can lead to bigger fires later (see video). In some areas, forest managers also practice selective logging to thin out the surrounding forest.

On other land, the forest is not actively managed, and dead wood is allowed to pile up for years. "In those cases, when it does burn it's going to be a hotter fire that will damage the trees even more than it normally does, although I don't think it will kill them," Sillett said.



Informative/Explanatory Writing Performance Task

Student Reading Text			
Grade	5	Title/Subject	Effects of Wildfires on Ecosystems – Article 2 continued

Forest managers have not been able to conduct controlled burns in places where too many people live nearby, such as [Calaveras Big Trees State Park](#) and [Mountain Home Demonstration State Forest](#). Instead, scientists take a combined approach. They selectively prune and log dead and dying trees and then stack up the wood and burn it in controlled piles.

"Giant sequoias are flourishing in response. They love it," said Sillett.

How Fire Benefits Sequoias

Schoolchildren often learn that sequoias benefit from fire because the heat makes their cones open up, the flames eliminate competing plants, and the ash serves as fertilizer. The relationship is actually a bit more complex.

"It's not like sequoias need fire to spread their seeds, but they live in a fire-prone environment, and they know what they're doing," he said.

Sillett said fires can reduce competition for sequoia seedlings and provide fertilizer in the form of ash, but the cones will also open up on their own.

A single sequoia can play host to more than 100,000 cones, said Sillett. The cones are green when living, meaning they carry out photosynthesis, producing some of the sugars that they need for their own growth. Each cone can live 10 to 20 years. It then dies, opens up, and drops its seeds.

When there is a fire, it kills a large percentage of the cones, causing them to drop their seeds en masse. Normally, it takes some time for the cones to open up. By the time the seeds hit the forest floor, the fire has moved on, and the earth has cooled.

To Sillett, what happens to the small number of sequoias in Yosemite's two groves is only part of the picture of the species' success. Sequoias are well adapted to survive fires, he said. "They are incredible trees."



Informative/Explanatory Writing Performance Task

Student Reading Text			
Grade	5	Title/Subject	Effects of Wildfires on Ecosystems – Article 3



<http://environment.nationalgeographic.com/environment/natural-disasters/wildfires/Wildfires>

Dry, Hot, and Windy



Photograph by Mark Thiessen

Uncontrolled blazes fueled by weather, wind, and dry underbrush, wildfires can burn acres of land—and consume everything in their paths—in mere minutes.

On average, more than 100,000 wildfires, also called wildland fires or forest fires, clear 4 million to 5 million acres (1.6 million to 2 million hectares) of land in the U.S. every year. In recent years, wildfires have burned up to 9

million acres (3.6 million hectares) of land. A wildfire moves at speeds of up to 14 miles an hour (23 kilometers an hour), consuming everything—trees, brush, homes, even humans—in its path.

There are three conditions that need to be present in order for a wildfire to burn, which firefighters refer to as the fire triangle: fuel, oxygen, and a heat source. Fuel is any flammable material surrounding a fire, including trees, grasses, brush, even homes. The greater an area's fuel load, the more intense the fire. Air supplies the oxygen a fire needs to burn. Heat sources help spark the wildfire and bring fuel to temperatures hot enough to ignite. Lightning, burning campfires or cigarettes, hot winds, and even the sun can all provide sufficient heat to spark a wildfire.



Informative/Explanatory Writing Performance Task

Student Reading Text			
Grade	5	Title/Subject	Effects of Wildfires on Ecosystems – Article 3 continued

Although four out of five wildfires are started by people, nature is usually more than happy to help fan the flames. Dry weather and drought convert green vegetation into bone-dry, flammable fuel; strong winds spread fire quickly over land; and warm temperatures encourage combustion. When these factors come together all that's needed is a spark—in the form of lightning, arson, a downed power line, or a burning campfire or cigarette—to ignite a blaze that could last for weeks and consume tens of thousands of acres.

These violent infernos occur around the world and in most of the 50 states, but they are most common in the U.S. West, where heat, drought, and frequent thunderstorms create perfect wildfire conditions. Montana, Idaho, Wyoming, Washington, Colorado, Oregon, and California experience some of the worst conflagrations in the U.S. In California wildfires are often made worse by the hot, dry Santa Ana winds, which can carry a spark for miles.

Firefighters fight wildfires by depriving them of one or more of the fire triangle fundamentals. Traditional methods include water dousing and spraying fire retardants to extinguish existing fires. Clearing vegetation to create firebreaks starves a fire of fuel and can help slow or contain it. Firefighters also fight wildfires by deliberately starting fires in a process called controlled burning. These prescribed fires remove undergrowth, brush, and ground litter from a forest, depriving a wildfire of fuel.

Although often harmful and destructive to humans, naturally occurring wildfires play an integral role in nature. They return nutrients to the soil by burning dead or decaying matter. They also act as a disinfectant, removing disease-ridden plants and harmful insects from a forest ecosystem. And by burning through thick canopies and brushy undergrowth, wildfires allow sunlight to reach the forest floor, enabling a new generation of seedlings to grow.