

DISCUSSION GUIDE

WILD FIRE

The Culture, Science, and Future of Fire

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Lerner™





This study guide was created in partnership with Understand Native Minnesota, a strategic initiative and philanthropic campaign focused on Native American narrative change in Minnesota's schools by the Shakopee Mdwakanton Sioux Community.

ABOUT THE CURRICULUM DEVELOPER

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During peak Camp Fire, the blaze was consuming an area approximately the size of 80 football fields per minute. Look at how quickly the fire grew out of control. <https://qrly.me/NIST>



Introduction

- If only given a few minutes to evacuate, what would you take with you? Split your list into needs and wants.
- Data shows that “although the annual number of wildfires decreased slightly between the 1990s and the 2020s, the number of acres burned has more than doubled in the same time span” (p. 8). What does this mean?
- Many people associate fire with being bad, but when are instances when it could be viewed as helpful?
- How does Indigenous thinking around fire often differ from that of mainstream ecologists?

See before and after photos from the Camp Fire here: <https://qrly.me/ABCNews>

CHAPTER ONE

Fire Ecology

- How has Yellowstone National Park defied all predictions after its 1988 wildfire?
- How is fire rejuvenative? In what ways does this counter what you currently think about fire?
- What components make up an ecosystem? How does the relationship between these components matter?
- On page 13, the authors introduce the term ‘fire regime’. This term indicates the relationship place has to fire. Where do you live? What ecosystem surrounds you (or would have traditionally surrounded you)? In knowing this, discuss what kind of fire your ecosystem “needs” to regenerate.
- It takes approximately 150 years to restore a forest. What does this transition from burn to mature forest look like?
- It seems counter intuitive that fire can help species survive. How was the buff-breasted flycatcher likely saved from extinction by fire?
- Pyrophytes are plants that have evolved to increase the plant’s survival during a fire. How do active and passive pyrophytes differ from one another?
- What techniques do animals use to survive a fire? Give examples.
- As animals emerge from their safe havens into the scorched landscape, what factors increase their likelihood of flourishing in this new environment?
- The book tells of the role black-backed woodpeckers play in helping burned forests become more livable for other animals. How does this relationship with other living things strengthen biodiversity?
- How is fire on the prairie beneficial? Why is fire a necessary factor to “keep the prairie a prairie”?
- Where do you live? Is your ecosystem accurately represented on page 19?
- How was fire used as a land management tool by Indigenous peoples? Why was the practice utilized and how did colonization impact its use?
- In what ways was limiting prescribed fire also used as a tool to control Indigenous peoples?
- What issues have arisen due to the suppression of prescribed burning?

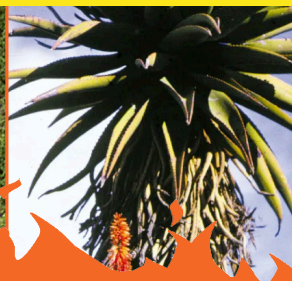


Some animals need fire to survive: <https://qrly.me/WashPostWildfire>

FIRE-ACTIVATED SEED



THERMAL INSULATION



RESPROUTING



PROLIFIC FLOWERING



TALL CROWNS



FIVE ADAPTATIONS OF PYROPHYTIC PLANTS

CHAPTER TWO

What Is Fire?

- How did the introduction of fire impact human development? How might it have altered where people chose to settle?
- Prometheus stealing fire is one origin story of how humans first acquired fire. What other stories have you learned about fire?
- What components make up the “Fire Triangle”? How are these items in relationship with one another?
- On Earth, we are surrounded by oxygen. What role does oxygen play in the reaction that makes fire?
- Think about the last time you built a campfire. What tips would you offer a first-time fire-builder? What do we know about “ignition temperatures” without perhaps realizing we already understand these fundamentals?
- What makes up the fire triangle in a wildfire? What can be done to alter the relationship between these factors to extinguish a wildfire?
- How did systems on Earth need to evolve to be hospitable for fire?
- What do the different colors teach us about fire? When might this be important knowledge to know?
- Describe how fire is a valuable tool for Indigenous peoples all over the world.

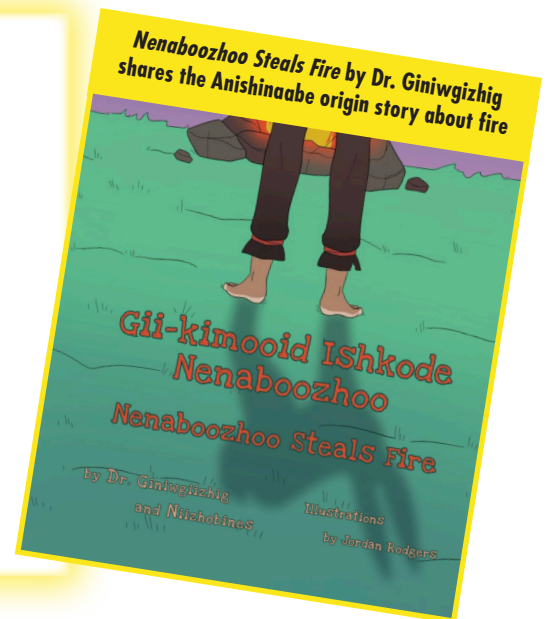
Piloted Ignition Temperature: the amount of heat needed for a specific substance to ignite in the presence of a spark.

Learn more about the world's ecosystems by using ArcGIS to pinpoint your location: <https://qrly.me/ArcGIS>



For many Native American peoples, living in relationship with the natural world is a priority. This means that human beings are not viewed as superior to plants, animals, or the environment, but rather as equal collaborators in the ongoing relationships that exist.

To learn more about kinship, reciprocity and Indigenous wisdom, download the discussion guide for *Braiding Sweetgrass for Young Adults* found here: <https://qrly.me/BSYA>



CHAPTER THREE

Land Needs Fire: Indigenous Fire Practices

- On the surface, fire can be considered as simply a tool, but for Indigenous peoples, it is so much more than that. Describe the relationship Indigenous peoples share with fire.
- How are controlled fires or “cultural burns” done in partnership with the land and animals? What relationships are being honored in this practice?
- When you take care of the land, the land takes care of you—this is reciprocity. Discuss the ways humans have benefitted from regular burns.
- How did colonization impact traditional land practices in Australia? How did the “homelands movement” heal the land and its people?
- How has fire been used in other parts of the world to strengthen cultural connections to land? In what ways have people in our region of the world used fire to uphold their traditional ways?

Learn more about the work of Warddeken Land Management here: <https://qrly.me/Warddeken>

CHAPTER FOUR

A History of Fire Suppression

- How did settlers perceive Indigenous uses of fire? How were these perceptions ultimately fed by racist beliefs?
- When did fire move from being used as a tool to something that should be suppressed?
- Indigenous peoples see fire as something you are in relationship with versus how the US Forest Service at its inception saw it—as something to be controlled. How do these ways of thinking differ? Discuss.
- What encouraged the National Park Service to rethink their policy around fire?
- Compare prescribed burning to a naturally occurring fire.
- Why was Smokey Bear created? How has his message changed over time?
- What is Traditional Ecological Knowledge and what role is it playing in national parks?
- Describe how Philmont Scout Ranch used tragedy as a platform to teach others about land management.
- Discuss the ways logging practices can hinder healthy forest development. How are your local forests managed? Who could you contact to find out?

The Minnesota DNR came under fire for putting profits over animal habitat: <https://qrly.me/StarTribuneDNR>

CHAPTER FIVE

Climate Change

- Why is climate change being blamed for an increase in wildfires? How has the climate in your region changed?
- What series of events was set in motion to create the Lahaina fire on Maui? What role did climate change play in this tragedy?
- What is the difference between wildfires and landscape fires?
- In 2023, Canada experienced a wildfire season like no other; what made this year extraordinary? Were you impacted by these fires? If so, how?
- What role does carbon dioxide play in climate change?
- What is meant by the term “tipping point” as it relates to climate change? What concerning events are we witnessing that indicate we’re in a negative trajectory? What changes have you witnessed over time in your community?
- Who are climate migrants? Whose communities are at risk of being overcome by our changing climate? Imagine no longer being able to live in the place you’ve always called home. Where would you go?
- The original fire triangle (seen on page 24) is made up of fuel, heat, and oxygen. In 2012, a new model was proposed; how has it been amended to include impacts of climate change?
- What are the Five Rs and how can they be used for wildfire preparedness?
- On page 68, atmospheric scientist Katharine Hayhoe explains that “Increases and decreases [in the amount of fire] can both be bad for the natural ecosystem.” Discuss how this can both be true.
- Wildfires burn and release carbon; how does post-doctoral researcher Brendan Byrne liken this to a feedback loop?
- Ecologist and author Chad Hanson believes that forests may have a built-in ability post-wildfire. Discuss his theory.
- What removal options have been proposed to lessen the amount of carbon in the atmosphere?
- Indigenous peoples around the globe are relying on their resourcefulness and understanding of the natural world to address new climate-related environmental challenges. Which community’s story is most intriguing to you? How can you find out what local Indigenous organizations near your community are doing?
- How are these communities leading by example?

Visualize how coastlines will be impacted using the Sea Level Rise Viewer: <https://qrly.me/SeaLevelViewer>



HOW HAS CLIMATE CHANGED OVER THE PAST 142 YEARS? https://qrly.me/YT_GlobalWarming

CHAPTER SIX

Fire Creating Its Own Weather

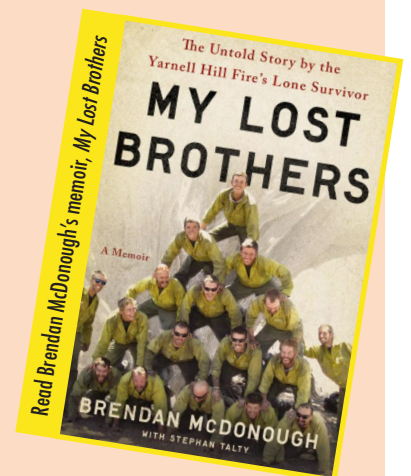
- What is a megafire and what makes them so problematic?
- What makes pyrocumulonimbus clouds dangerous? Describe their cycle.
- How much money was spent to fight the Dixie Fire? How much did it cost per day to fight? Discuss what other costs should be considered besides the firefighting expenses.
- What is a fire tornado? How do they differ from fire whirls?
- How is lightning created? What fact about lightning is most interesting to you?
- Ecologists caution the use of the term “catastrophic wildfire.” How is the term used to reinforce a particular way of thinking?
- What are “zombie fires”? Where do they occur? What makes a particular area of the world more likely to experience them?

Explore the New York Times 3D-augmented reality Dixie Fire experience: <https://qrly.me/NYTDixieFire>

CHAPTER SEVEN

Fire Heroes: Confronting the Blaze

- In addition to wildland firefighters, there are three specialized groups of professionals who fight fires in unique ways. Describe their roles and discuss how they support one another.
- What happened at Yarnell Hill? How does Brendan McDonough re-envision protocols around hotshot crews?
- What are some ways that technology can positively impact how all types of fires are fought?
- What is the primary goal of aerial firefighting? How do air support crews and on-the-ground firefighters work in tandem?
- How has fighting fires become a money-making venture? How has this added extra complexity to the issue?
- Describe how fire retardants are supposed to work. What is the controversy surrounding them?
- Debate the pros and cons of utilizing fire retardants.



Satellite technology is helping people on the ground identify fires sooner: https://qrly.me/ArcGISFire_Smoke

CHAPTER EIGHT

Learning to Use and to Live with Fire

- What are the risk factors that must be considered before undertaking a prescribed burn?
- One tool fire managers can use are firebreaks. Describe the four different types (and how they are used).
- When working with fire, there's always a chance that things may not go as planned. How often does this happen despite careful planning? What risks remain unpredictable no matter how much you plan?
- The knee jerk response to a prescribed burn that doesn't go as planned is to stop the practice altogether. How is this practice counterintuitive?
- What are the primary causes of unplanned fires?
- Advocates for planned fire suggest that blazes that don't threaten humans should be monitored, but not suppressed. Ecologists believe that, "Every time you put a fire out, you're just postponing it" (p. 104). Do you agree or disagree with this statement? Discuss.
- What factors contributed to the varied outcomes of the Washburn and Oak Fires?
- What is the wildland-urban interface and why is it the toughest to defend?
- One community in California—La Tuna Canyon—requires residents to maintain a 100-foot perimeter of "defensible space" around houses. What does this mean and why is it so important?
- How are Indigenous peoples collaborating with state, federal, and non-profit organizations to share traditional knowledges involving fire systems?

Learn more about the work of the Indigenous Peoples' Burn Network here: <https://qrly.me/IPBN>

Conclusion

- How has the community of Paradise persevered?
- "Fire isn't always an opponent" (p. 115). In what ways does fire show up in your life? How do you maintain a healthy relationship with it?

One of the ways Paradise is rebuilding is by using fire resistant housing like Q Cabins. Learn more about their design here: <https://qrly.me/QCabins>