



Building Community Resilience to Wildfire

Anchoring Phenomenon

Wildfires are occurring more frequently in the western US. These wildfires are also increasing in size and severity, leading to a phenomenon called megafires. While people cannot predict when or where the next big fire will occur, forecasters can use climate and forest composition data to assess risk levels. Time and time again, we see lives lost and property damaged due to wildfire, even though the risks and impacts of wildfire are well known.



Wildfire threatens a home near Possum Kingdom, Texas.

Photo Credit: [State Farm / flickr](#)

Lesson Overview

Students will identify a resilience strategy to make their community more resilient to wildfire.

- *Activity 1 - Identify (30 minutes) What strategy will you investigate, and for which area?*
Students review the virtual expo, and review the areas they identified as at-risk for wildfire, and a resilience strategy they would like to focus on.
- *Activity 2 – Research (30 minutes) Would your strategy work? Is it needed?*
Students interview family and friends about what they know about wildfire, and look into the feasibility of your idea.
- *Activity 3 – Prototype (45 minutes) Create a pitch for your idea*
Students create a draft of their idea proposal.
- *Activity 4 - Iterate (30 minutes) Improve your idea based on feedback*
Students present their prototypes to their peers, and/or a community expert for feedback.
- *Activity 5 - Launch (45 minutes) Create your presentation.*
Students incorporate feedback to create their final presentation for submission.



Instructional Overview	
Grade Level	Middle/High School
Instructional Time	180 minutes
Standards Alignment	NGSS: MS-ESS3-2 , HS-ESS3-1 CDE: MS3.ESS.GLE9 , HS3.ESS.GLE10
Driving Question	How can we mitigate the impacts of wildfire and create a more wildfire resilient community?
Learning Goal	Students will create a project proposal to increase community resilience to wildfire that they could implement.
Materials	<ul style="list-style-type: none"> <input type="checkbox"/> Computer and internet access are essential for this activity. Ideally each student will have access to a computer or tablet.
Material Preparation	<ul style="list-style-type: none"> <input type="checkbox"/> Post the Activity 1 Identifying a Wildfire Resilience Strategy Handout and an editable copy of the Activity 1 Wildfire Resilience Strategies Class List to Google Classrooms or class website. Students will need digital access to the worksheets to access the links for each activity. <input type="checkbox"/> Print copies of the Activity 3 Wildfire Resilience Strategy Outline for each student. <input type="checkbox"/> Optional: Download your Local Hazard Mitigation Plan from here: https://www.colorado.gov/pacific/mars/approved-plans. Look for a list of hazard mitigation strategies to share with students as examples of projects they could pursue. <i>*Note: Though there are a general set of guidelines for local hazard mitigation plans, not all plans are organized the same. Spend some time exploring the document before teaching the lesson to avoid confusion.</i>
Vocabulary	<p><u>Natural hazards</u> are naturally occurring phenomena such as flood, wildfire, extreme heat, or drought, which may disrupt or damage a community.</p> <p><u>Wildfires</u> are defined as an unplanned, unwanted wildland fire including unauthorized human caused fires, escaped wildland fire use events, escaped prescribed fire projects, and all other wildland fires where the objective is to put the fire out. .</p> <p><u>Fuel load</u> is the total amount of combustible (burnable) material in a defined space.</p> <p><u>WUI</u> is an acronym for the Wildland-Urban Interface, the area where forests and human development overlap.</p> <p><u>Preparedness</u> is to have plans in place for communities to respond when a disaster or emergency happens in order to protect lives and community assets (coresiliency.com; i.e., ready to respond).</p> <p><u>Mitigation</u> uses planning tools and strategies to reduce a community's risk to natural and man-made hazards (coresiliency.com; i.e., reduce risk).</p>





	<u>Resilience</u> is the capacity of community members and organizations, such as schools, businesses, or hospitals, to maintain essential functions before, during, and after a hazard event (i.e., the ability for a community to bounce back).
Opportunities for Bringing Experts into the Classroom	<ul style="list-style-type: none"> • Activity 1: Kick off the lesson with a local expert (forester, emergency manager, wildland firefighters) talking about wildfire to give students ideas for resilience strategies. • Activity 2: Compile a list of contact information for local experts for students to interview as they research their idea. • Activity 4: Invite local experts to give students feedback on their project ideas.

Activity 1 (Identify)

What strategy will you investigate, and for which area?

Use the [Activity 1 Handout](#) to complete this activity.

- 1) Read the [Guidelines for the Virtual Expo](#).
- 2) Review the vulnerable areas you identified in the Wildfire Map ArcGIS activity (activity instructions below if you have not completed the activity). Which of these areas do you think it's important to focus on? Choose one, and take a screenshot of a map of the area, showing the flood risk in the area.

Resource:

- Use the [GIS Activity Instructions](#) to explore the [Colorado State Forest Service Wildfire Risk Public Viewer](#) map and identify areas at risk for wildfire.
- 3) Next, identify a wildfire resilience strategy that you would like to focus on in this area. Use the resources from Group 4 in the wildfire lesson, and take a look at the list of resilience strategy examples.

Resources:

- Project Examples and Strategies from Local Mitigation Plans (midway down the [Resilient Colorado Virtual Expo](#) page)
- [Does Wildfire Mitigation Work? 16 Examples and Counting!](#)
- [Colorado State Forest Service - Protect Your Home, Property & Forest from Wildfire](#)
- [National Fire Protection Association - Preparing homes for wildfire](#)





- 4) Put a screenshot of your area and a 2 sentence description of your resilience strategy in [this document](#).

Activity 2 (Research)

Would your strategy work? Is it needed?

Research the feasibility of your strategy idea, and whether it's needed. Interview 5 friends or family members in your community to get ideas for your proposal, or create a short Google form survey to collect ideas and learn more about the community's need for a solution.

Consider the following questions as you are interviewing or surveying people:

1. Are you concerned about wildfire in Montrose County? Why or why not?
2. What areas are at risk for wildfire in Montrose County that you know of?
3. *Explain the area you've identified as a risk area.* Do you know anything about wildfire risk in this area?
4. Do you know what to do if a wildfire happens in our county?
5. Do you know what resources are available if you need help? (ie. if you were camping and a wildfire began close to you, what would you do? Who would you call?)
6. *Share your idea for a solution.* What do you think of this solution?
7. Do you have ideas of what we can do in our community to be prepared for and mitigate the impacts of a wildfire?
8. Do you have ideas for solutions that I could implement to increase our community's resilience to wildfire?

Activity 3 (Prototype)

Create a pitch for your idea

Create a poster using Notability, or a 2-5 minute video to share your proposal idea with your peers. Begin by filling out the [Wildfire Resilience Strategy Outline](#) to collect your ideas.

The presentation should include:

- Project Description: What is your solution?
 - What do you plan to do?
 - Where do you plan to do it?
 - Who are the stakeholders? Who will you involve and what will their role in the project be?
 - What resources do you need to complete the project? How do you plan to get these resources?





- What is a suggested timeline (and how will you take into account potential social-distancing requirements due to COVID-19?)
- Project Justification
 - Why is your project important? What is your evidence, and/or how do you know this is a need in your community?
 - Who will the project benefit?

Activity 4 (Iterate)

Improve your project based on feedback

Present your project proposal to your classmates and/or an expert for feedback on the idea. After you've explained your idea (and shown them your poster or video), use the following questions to get feedback.

- 1) What did you like about the project proposal?
- 2) What could we do to improve our proposal?
- 3) Would this project be feasible?
- 4) Does this proposal provide a solution to a demonstrated problem? If not, how could we change it?
- 5) Is there enough information in our proposal?
- 6) Are the stakeholders clearly identified? Is it clear who will be able to complete the work?
- 7) Are the resources to complete the plan readily available? If not, are they easily attainable?

Activity 5 (Launch)

Create your presentation

Using the feedback you got, revise your prototype and prepare your final presentation to submit to the Virtual Expo.

Submit your poster or video [here](#).

