

## Background

Wildfires have been sweeping throughout the world. Some good, some bad. But there is more known about wildfires now, than there was ever before. We know now that the slightest wind or human error can cause a wildfire and have devastating consequences. These consequences can cost both people and the ecosystems a lot. We might not know how much, but we can only imagine.

A wildfire or bush-fire is a fire that is uncontrolled and can be fueled by different types of weather, dry underbrush, and wind. A wildfire can burn and easily destroy acres of land, while also destroying anything in its path in just a few minutes. In the United States there are about 100,000 wildfires every year (Rinkesh, 2020). This number is predicted to increase with the rise of climate change. Most people think that nature is the main cause of fires. But natural causes, like lightning and volcanic eruptions are only 10% to 15% of the cause. While as people are 80% to 90% responsible. Many things that we do can cause a fire such as: burning debris, unattended campfires, engine sparks, cigarettes and fireworks.

Fires can burn for days, weeks or months. Because of this, there is more and more land being destroyed, both natural and agricultural land, as well as plant and animal life. Fires are growing more frequent and burning with more intensity than they have ever before. With 2017 and 2020 being the worst drought years, temperatures are increasing more every day (walking with fire: a wildfire documentary, 2019). In 2017 there was 71,499 fires and about 8.8 million acres burned. But by December 18 of 2020, there were 57,000 wildfires with more than 10.3 million acres compared to 4.7 million acres in 2019. 2020 had five of the top 20 largest California wildfires (Insurance Information Institute, nd). The chance of a wildfire and brush fires are increasing even more with surging amounts of people moving to lands with wildlife around them.

Not all wildfires are bad. In nature there are little wildfires that help the ecosystem bring new life. But when it gets out of control or the slightest wind pushes it further, that's when it gets to be a problem. People even use fire to get rid of debris to make new life or to stop a wildfire. This is called back-burning or a controlled fire (Hancock, nd). People set a controlled fire in the path of an existing wildfire. They burn all the fuel in that path so when the fire reaches it, there is no fuel. This stops the fire from burning further amounts of land. When people don't know how to do this properly, it can have devastating consequences. If the fire gets out of control it can kill and make the wildlife disperse, alter water cycles and ruin soil. As well as putting the community in danger.

In 1995, only 16% of the Forest Service budget for fires was spent on that (environmental defense fund, nd). But, in 2017, the Forest Service spent 55% of its budget putting out fires. This number is more than doubled since then. Because so much money is spent on this, there has been little money for wildfire prevention.

Even after a fire, there can still be consequences days later. Sometimes the aftermath of a fire can be more devastating than the fire itself. A wildfire can give way to new plants, but can also destroy too much plant life. This can give way to erosion that can create landslides and flash floods since the plants are not there to hold the soil (Wildfires: Interesting Facts and F.A.Q., nd). As well as invasive plant species growing back quicker than indigenous vegetation. These invasive plants grow back denser, which means that area can burn longer than before.

Wild fires can be deadly. Both for plants, animals, and humans. As well as acres of property lost over the years from this. With temperatures increasing because of climate change, there are more and more fires. Fires can get out of control easily with bad weather conditions. As well as more money being spent suppressing fires and little money left over for wildfire prevention. All of these combined time after time to create the biggest fires that we have seen over the years.



Some of the things in my drafts did not make it to the model but the main points are there. At first I was going to make the houses out of popsicle sticks, but that did not work out. So, I improvised and made them out of card stock and one out of brick printed paper. As well as legos.

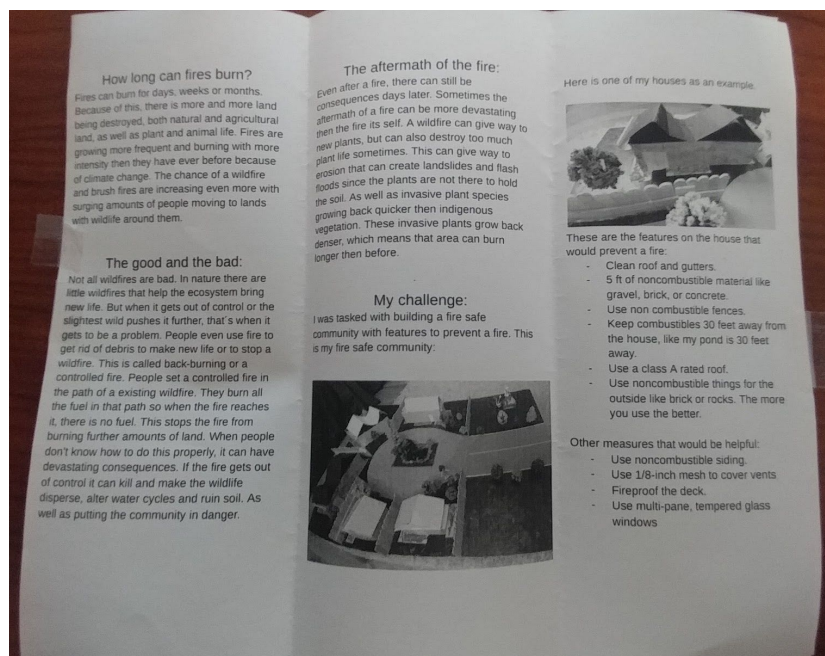
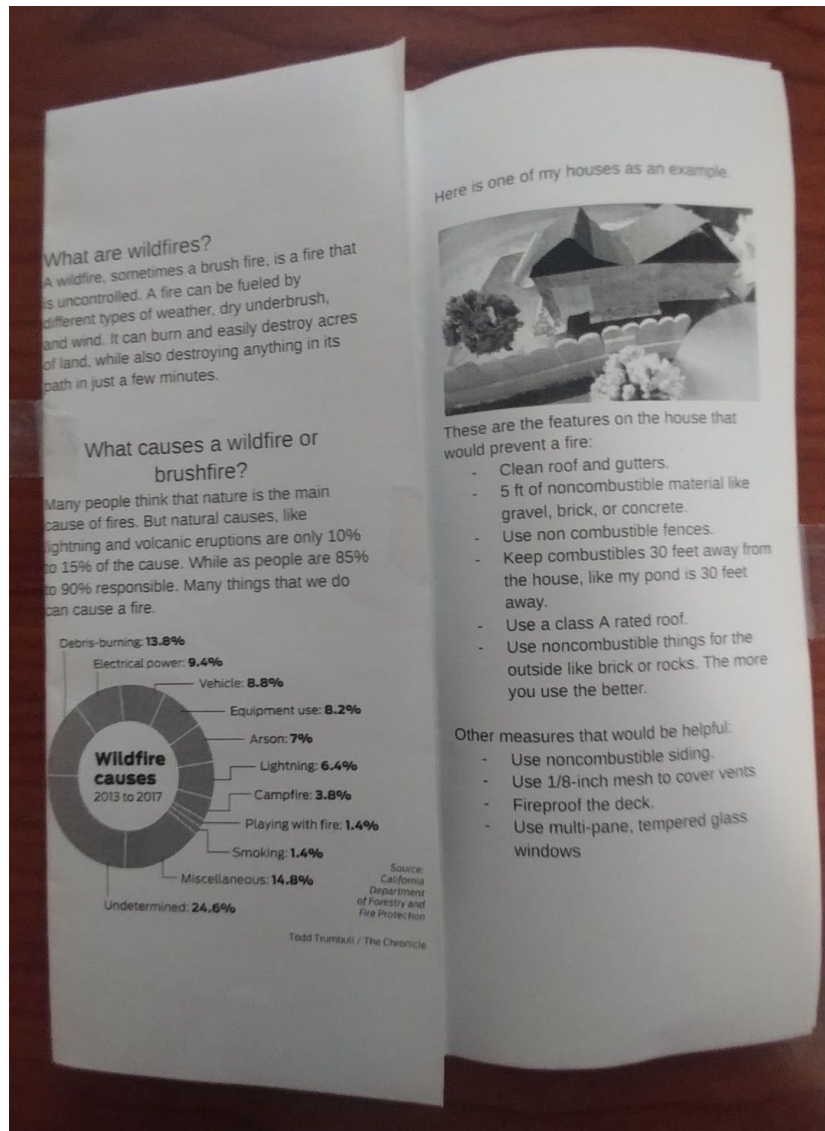
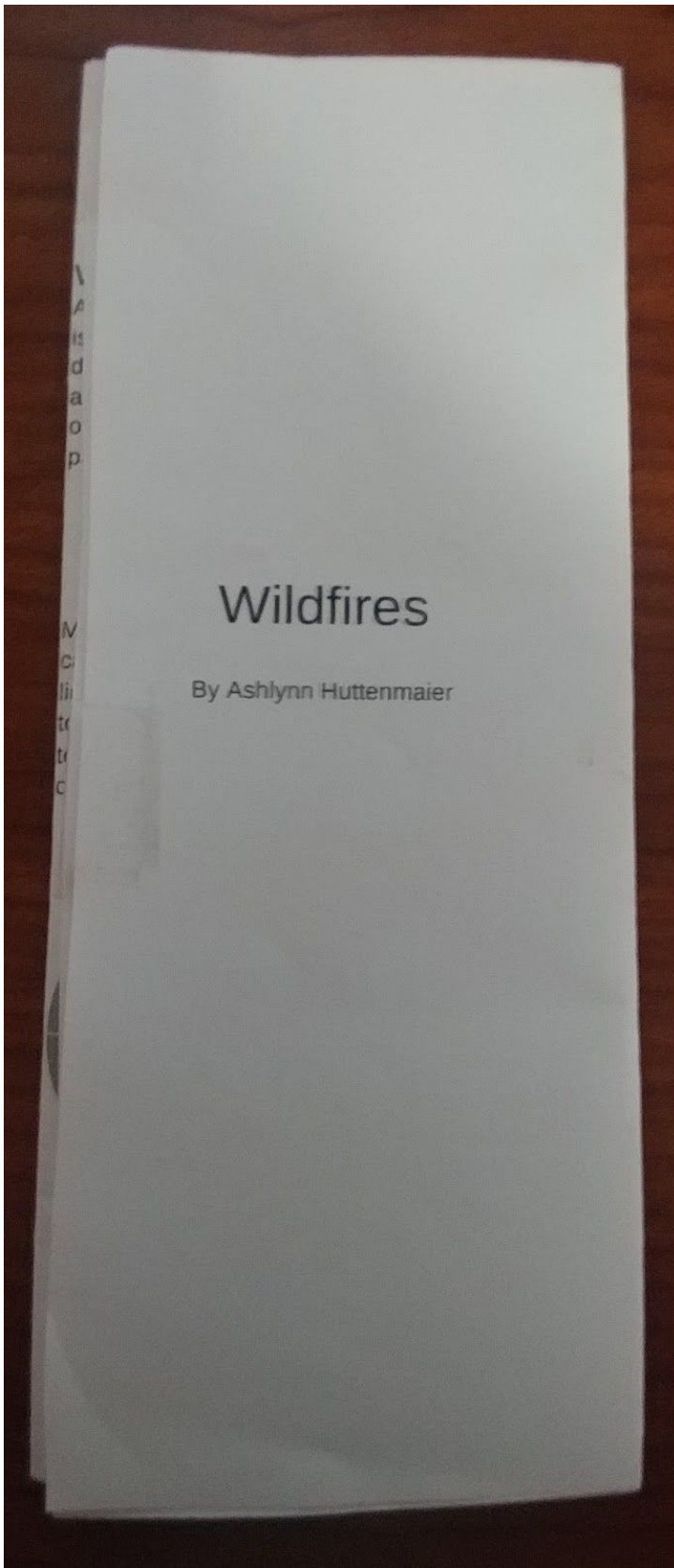


Some of the things that i implemented into the modal are:

- On the left side there are clean gutters. As well as a clean roof.
- 5 ft of noncombustible material, I have gravel. But others are brick or concrete.
- The fences are made of material that is noncombustible.
- Keep things that can easily spread fire 30 feet away from the house. For example my pond is 30 ft from the house. Another thing would be playground sets.
- You should also use a class A roof.
- Use non combustible materials for the house like rock. As well as bricks, like my house.



But I also wanted to make people aware of the facts and the effects of a fire. As well as to explain the modal and point out what should be done house wise for precautions. As my final step I did a brochure.



My solution is creative because it combines all the things that should be done if a fire safe community is to be built. I have seen many suggestions on what should be done, but few people have actually put it all together. As well as adding an additional step to make people aware of the dangers and what they should have, in a brochure.

As temperature goes up, so does the chance of fires. Both in the wild and in a community. This is looking toward the future to keep a community safe as the increasing chance of fires get bigger and bigger. Even if there are just a few improvements from my list that make the house fire ready, then they should be there.

People who will use this are construction workers working on a neighborhood. As well as normal people looking to improve on their home. Lastly, people who are building a home will be able to implement most to all of the suggestions.

Many of my life experiences have shaped the way I see this problem. One of them is throughout my school years I have always loved animals and the ecosystems around them. This is because of my family, but mainly my mom. I got my love of animals from her. We have owned fish, a chameleon, birds, and sugar gliders. As well as we have dogs now. This has made me very interested in animals and know a lot about them. The second main experience that has shaped me is girl scouts. I have learned to respect the environment more and to "leave no trace" as we say.

Some of my family lives in places that are in rural areas. These places have lots of woodlands and animals in the ecosystem. They would be the most affected by a fire since it can spread more easily than a normal community. Fire can easily reach them as well because there is more fuel with all the trees. My solution will make it so that a fire does not easily spread around the house. As well as if it gets to the house, it will not have much fuel.

#### Citations:

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