

Firewise

Time: 120 minutes of reading and answering questions

Supplies:

[‘Are You Firewise’ booklet](#) (online version available under the links section)

Highlighters and/or colored writing tools

[Defensible space images](#) (found in the materials section) of the houses student will use to model fire mitigation

Background

At this point, students should understand the basics of how energy is transferred and be able to make the connection between energy transfer and how fire spreads.

Most houses are totally lost when ignited in a wildland fire. All three forces of energy transfer - conduction, convection, and radiation - come into play when a house ignites. The house becomes the fuel load. This is why prevention of home ignition is the driving force behind creating defensible space (D-space).

On occasion, a house ignited by a wildfire will be saved. I once visited a home where the firefighters used chainsaws to cut a burning deck away from a home to save the house! Kudos to those unnamed firefighters.

Wildfire is a global issue. In 2009, Russia and China experienced a large number of fires. Both countries use social networking sites. China has its own sites, which are larger than Facebook and Twitter. I found some incredible posts, and the pictures are striking. These countries have a culture woven of old and new that jumps out at you when viewing the photos. Some of the firefighters, citizens and military who are battling the fires have no personal protection equipment. Below is a quote from a Russian individual on Facebook.

“On the one hand - fire is nature's way of housecleaning to allow new growth.
On the other hand - this is people's lives and homes and memories.
Praying for all, and that, like the firebird, Russia rises beautifully from the ashes.
I'm posting on Facebook to raise awareness.”

This quote can be used as a segue for your students into assessing risk and modeling defensible space. Fire is truly a global issue.

Instructions

1. Print a copy of “Are You FireWise” for each student or group of students. The book is downloadable and printable off of the website <http://csfs.colostate.edu/pdfs/wholenotebook.pdf>. The 20-page booklet works best if printed in color. We will be using the Colorado State Forest Service’s “Are You FireWise” for the greater part of this project.
2. Break students into teams consisting of 3 or 4 members.
3. Hand out the “Are You FireWise” printout.
4. Have the students read “You Are at Risk” as a class. This reading sets a tone of urgency and answers the question of why a student should learn about this issue.
5. Talk about the “once-rural areas surrounding municipalities.” They are not just forests that burn, they are urban forests, grass lands, drained wet lands, fields of weeds, and so on. A few years ago a fire went sweeping along the irrigation canals in Albuquerque, New Mexico and then along the Rio Grande. It crowned in the cottonwoods forcing evacuations in the city.
6. Have the students pay close attention to the last paragraph of this section. Lead a discussion on the title choice of ‘You Are at Risk!’ versus ‘Are You at Risk?’
7. Have the students read the next two topics (‘Access’ and ‘Water Supply’) quietly. Remind the students to highlight important facts. They will need them later. After the students are done reading, please read my reflections. I hope they help students understand the severity of the problem.

Reflections by Theresa Springer, Coalition for the Upper South Platte:

“Access: Shortly after the Hayman Fire was declared out, I was sent out to evaluate and do burn severity assessments. Owners were calling in asking for help. I went out to see where their worst problems were and what kind of work needed to be done to rehabilitate properties. Most of the subdivisions had wooden street signs. The majority of lots were vacant and forested. Most of the landmarks also burned, and everything was one color, black. It was quite a challenge to locate someone’s home or property. On the other hand, the Trout Creek subdivision has metal street signs and metal addressing. Which do you think I preferred? I recall a house fire in Eagle's Nest. The house had a long driveway curving up the side of a hill. The tanker truck could not make the turn on its way up to the house. Its back wheels lifted off the ground. The truck rolled down the hillside landing where it blocked the driveway, but within easy access for the rescue crew. The driver was trapped. The firefighters had a new emergency - rescuing the driver. The house burnt down.

Water Supply: Water supply must be factored in when creating defensible space around a home. Most of the homes I have visited during property assessments had very little in the way of water supply. Electricity supply is cut off quickly during a fire, and ponds often become the only source of water. Good defensible space and proper planning are required in order to maximize the time firefighters have to defend a home from wildfire.

Regulations: I went to a joint emergency planning meeting where we were discussing if it was fair and legal to have standardized outlet sizes and threads on water mains and valves. Should it be acceptable to hand the fire department the correct adapter and wrench that fits your custom built home or custom subdivision, or should it be standardized? During the meeting a frustrated firefighter left and came back in with an armful of outlet adapters. He repeated this again and again. The supplies he had were heavy and cumbersome. He recruited a second person to carry in the various styles of wrenches required to use with the different adapters. His point was made. Ask your local fire department if all of their fire hydrants have standardized valves. Could you imagine another fire district coming to help and not being able to hook your hoses to the water supply because they did not have your special adaptor?"

Defensible Space:

8. Read the section "Defensible Space". This is where we connect energy transfer to D-space and fire.
9. Have the students number the bullet points.
10. Ask them to think and talk about what type(s) of energy transfer is being mitigated (action taken to prevent something) for each bulleted action.
11. Have the students define ladder fuels. What type of energy transfer occurs in ladder fuels? I am not interested in the students having one answer, as there is not one right answer. The objective is to get them to think.

Example: A decorative Halloween corn stalk in front of a house catches on fire. It radiates heat to some dried flowers in a flowerbed growing along a cement foundation. One spark flying over to the flowers will, by convection, light the flowers on fire. Through conduction, the flowerbed will burn around the base of the house, then onto a dried vine growing up to the roof. The roof shingles catch on fire.

What is the easiest way to prevent such a scenario? Answer: rake the dried flowers and dispose of them.

Trees & Shrubs, Construction Design & Materials, Interior Safety, and What to Do When.

12. These should be assigned as independent reading. Instruct student to highlight what is important to them.