



Role-Playing Game to Build Community Wildfire Response Skills

Setting the Stage

It's summer and it has been hot and dry for weeks! The wildfire risk is high in your community. In this game, you will need to act fast and work together to prepare for and respond to an extreme wildfire event. As a community, you will need to assess strengths and vulnerabilities, take stock of available resources, and allocate them during the emergency.



Playing the HEART Force Wildfire Game

Game Overview

Students will solve the challenges that their community faces during the course of an extreme wildfire event by using available individual and community resources. Students work in three “zone response teams” to determine the responses they will take in each round as the wildfire situation evolves. Students use resource cards to respond to increasing wildfire severity and to unanticipated challenges that arise.

Watch the [How to Play the HEART Force Wildfire Game Video](#) to learn how to play the game.

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Instructional Overview	
Grade Levels	Middle and High School
Instructional Time	50-70 minutes
Unit Driving Question	How can we make our community more resilient to wildfire?
Lesson Driving Question	How can a community use existing resources (including youth) to respond to challenges that arise during a wildfire?
Building Toward	NGSS: MS-ESS3-2 , HS-ESS3-1 CDE: MS3.ESS.GLE9 , HS3.ESS.GLE10
Three Dimensions	<p>Science and Engineering Practices:</p> <ul style="list-style-type: none"> ● Constructing Explanations and Designing Solutions ● Obtaining, Evaluating, and Communicating Information <p>Disciplinary Core Ideas:</p> <ul style="list-style-type: none"> ● ESS3.B: Natural Hazards <p>Crosscutting Concepts:</p> <ul style="list-style-type: none"> ● Systems and System Models ● Cause and effect
What Students Will Do	<ul style="list-style-type: none"> ● Evaluate information on wildfire conditions to appropriately use community resources to respond to a wildfire in their community by assessing the causes and effects of extreme wildfires. ● Design solutions to address wildfire risks using a system model of a community wildfire response effort.
Materials	<p>Materials can be ordered from the HEART Force program staff or printed from the HEART Force website.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Facilitator script (included in this document) <input type="checkbox"/> Large <i>map of the community</i>, either projected or printed and posted <p>Each team will need (at least three teams needed to play):</p> <ul style="list-style-type: none"> <input type="checkbox"/> One Wildfire Game Board <input type="checkbox"/> One copy of Wildfire Game Response Guidelines <input type="checkbox"/> One copy of Wildfire Game Resource Card Guide <input type="checkbox"/> One copy of Wildfire Game Emergency Updates and Challenges (to be handed out only in the round in which they are used) <input type="checkbox"/> Wildfire Game Resource Cards (note: One set of the Wildfire Game Resource Cards for the class, and one Individual Resource Card per student)
Material Preparation	<ul style="list-style-type: none"> <input type="checkbox"/> Read the complete facilitator script before playing. <input type="checkbox"/> Print copies of game materials (see above). Cut out the resource cards. Laminate game materials if you want to reuse them. <input type="checkbox"/> Project or post the large <i>map of the community</i>. <input type="checkbox"/> Organize handouts for each zone response team so that they are easy



	<p>to distribute between each round.</p> <p><input type="checkbox"/> Community resource cards will need to be collected, shuffled, and redistributed between rounds. This is a good task to delegate to a student.</p>
Vocabulary	<p><u>Defensible space</u> is a zone around homes or other buildings that has been cleared of flammable materials.</p> <p><u>Fire retardant</u> is a substance that is used to slow or stop the spread of fire or reduce its intensity</p> <p><u>A flare-up</u> occurs when winds blow embers to a new area, increasing the size of the wildfire.</p> <p><u>Wildfire</u> is a widespread and destructive fire in a wilderness or rural area.</p>

Scoring

After each round, zone response teams should total up the number of Immediate/Community Actions that they successfully addressed in that round, as well as the number of Secondary Actions, Other Actions, or Collaborations. Keep track of zone response team scores between rounds on a whiteboard or projected spreadsheet.

Team	Round 1	Round 2	Round 3
Zone A	4	5	
Zone B	5	6	
Zone C	4	6	

Example scoreboard

Facilitation tips

- The *Emergency Update* for each round of the game requires participants to address an immediate wildfire challenge, as well as a *Community Challenge* that causes additional disruption in the hazard response.
- Each zone has different challenges and will require different resources to address them. Zones A and B will always be focused on addressing wildfire, while Zone C will never experience wildfire but instead will always be in charge of the *Community Challenge*.
- Solving a challenge requires having either the resource card specified or coming up with a creative solution (optional; see below). You can assume that if you have the indicated resource card, you have all the supporting resources needed to use it. For example, if your task is “Deploy volunteer teams to evacuate people,” you only need the *Volunteer Teams* card, without any additional communication resources, vehicles, etc.



- Using creative solutions (optional): Each round, students can solve their tasks using a creative solution (a creative combination of community and individual resource cards), but it must fit the challenge. Some students may try to abuse the flexibility around the option to use creative solutions (e.g., they may try to use *Pet Carrier* card to address a *Flare-Up*). You can increase accountability by having zone teams report out on their creative solutions at the end of the round or have teams evaluate or vote on each other's creative solutions. The creative solutions option can be omitted for younger or larger groups to simplify the game.
- Each round stands alone in terms of solving challenges. Challenges and resources do not carry between rounds.

Facilitator Script

The facilitator script is shown in blue, to be read aloud or paraphrased.

Introduction to the game (5 minutes)

Facilitator: Good afternoon, members of the [*name of your town*] community! Thank you for joining us to play a game in which we are going to work together to protect our community from a severe wildfire event. Our goal is to learn how to invest in and use our resources wisely to respond to changing conditions during the wildfire. So, to get started, let's break into three zone response teams.

Tip for assigning teams:

There are three zones, so have students count down numbers from 1-3 and repeat. All students assigned "1" will be Zone A players, all students assigned "2" will be Zone B players, etc. Each group should have 4-5 students. If you have more than 12-15 students, create two groups for each zone.

Break into zone response teams. Post/project/hand out the map of the community.

Facilitator: Find your zone on the map of the community and get a sense for where your zone is located. Each zone response team is in charge of addressing wildfire impact in your zone.

Notice that:

- Zone A is closest to the forest where the wildfire risk is the highest and where the fire is burning,
- Zone B a little farther away, and
- Zone C is completely out of the wildfire path.



Introduction to resource cards (10 minutes)

Facilitator: The game has three rounds and, in each round, the zone response teams must use their available resources to handle the impact of wildfire and related challenges. You have two kinds of resources that you can use in each round: *community resources* and *individual resources*. Each round, your team will receive a selection of community resource cards and you will select the most useful ones for your zone. On the other hand, individual resource cards are resources that you personally bring to your community. Community resource cards will be re-shuffled and distributed anew for each round.



Examples of community resource cards (above) and *Resource Card Guide* (below).

I'm going to hand out 13 *community resource* cards to each group. Look them over carefully and be sure you understand what they represent. You can find a list of all the community resources that are in the game on the *Resource Card Guide*.

Hand out [community resource cards](#) and [Resource Card Guide](#).

Facilitator: In each round, the zone response teams will encounter a series of challenges. To solve the challenges, you must have the resource card that corresponds to that challenge. Your team earns points each round for how well you use your resources to address the challenge.

In addition to using the resource cards to solve your own challenges, as you play you may share them with other zone response teams. It strengthens your community response when everyone knows about each other's resources and is willing to share them. Your team can gain a maximum of one point per round by collaborating. But only the team giving the resources gains the point, the receiving team does not.

EQUIPMENT		# CARDS IN GAME
Bulldozer		1
Hand Tool Sets		3
Helicopter with Fire Retardant		1
Industrial Water Hose		2
Pet Carriers & Food		1
Road Barricades		1
Road Signs		1
Two-Way Radios		1
Volunteer Safety Supplies		1
Water Reservoirs		2
4x4 Vehicles		2
PEOPLE & COMMUNITY		# CARDS IN GAME
Emergency Coordinator		2
Firefighting Crew		2
Medic Team		2
Police Officers		1
Roadwork Crew		1
Veterinary Technicians		1
Volunteer Team		2
SERVICES & HOUSING		# CARDS IN GAME
Automated Alert/Notice System		3
Emergency Shelter & Supplies		1
Public Transportation System		2
State Emergency Response Request		1
INFRASTRUCTURE & OTHER		# CARDS IN GAME
Alternate Evacuation Route		2
Alternate School Facilities		1
Defensible Space		1
Fire-Resistant Construction		1



Facilitator: Now I'm going to hand out the *individual resource cards*. There is one card for each player. The individual resource cards represent what you as a person can do to help your community during an emergency. You have a lot more valuable skills than you probably realize.

Think about things you can do like communicating between people, or helping take care of people or pets who are displaced, helping to organize and set up emergency shelters. **Please mark one of the skills listed on your individual resource card.** This is your personal skill for the entire game, so pick the one that best fits you.

Hand out *individual resource cards*.

Facilitator: One of the ways that individual resource cards can be used is by combining your individual resource card with a teammate's individual resource card to make a volunteer team.

If your zone response team does not have a community *Volunteer Team* card, you can use a combination of two individual resource cards that each have a different skills selected to make a volunteer team. And if your team does not have enough individual skill diversity to make a volunteer team, you can share your cards with other zone response teams, as long as both teams agree to share.

INDIVIDUAL RESOURCE	
	Think about your skills and interests. What is an activity or job that you could do to help your community in an emergency?
<input type="checkbox"/>	Caregiving
<input type="checkbox"/>	Construction Help
<input type="checkbox"/>	Driving/Transporting
<input type="checkbox"/>	Communications
<input type="checkbox"/>	Neighborhood Organizer
<input type="checkbox"/>	First Aid/Medical Assistance
<input type="checkbox"/>	Other: _____

Round 1 (10 minutes)

Facilitator: It's summer in [your community] and it's been very dry and hot for weeks. It's time to start thinking about how to prepare our community for wildfires.

Hand out *Wildfire Response Guidelines*.

Facilitator: Each zone response team will need to decide which resources you want to use in the first round of the game. You don't yet know exactly what the wildfire risk level and challenges will be in this round, but you know that there have been dry, hot conditions, and you know where your zone is located in the community. Prioritize which resources will be most important to address potential wildfire impact in your zone – you can only keep **eight community resource cards**. Use the *Wildfire Response Guidelines* to help with your decision. You have 3 minutes to decide on the cards

The Wildfire Game		
Wildfire Response Guidelines		
As the wildfire progresses, your community will face increasing risk. Use this guideline to think about what resources you need to respond to the changing situation.		
Wildfire Levels	Immediate Actions	Secondary Actions
Level 0 No Wildfire Risk	Lowest wildfire risk, no action needed—address the Community Challenge .	
Level 1 Low Wildfire Risk	Task a: Send alert with automated alert/notification system via email, social media, reverse 911 to vulnerable tier families A Task b: Volunteer teams ready to move equipment to vulnerable tier families A Task c: Confirm alternate evacuation routes Task d: Firefighting crews on alert and ready Task e: Request additional police officers to be available with traffic redirection	Task f: Have road signs or road barricades ready to deploy to roadways near wildfire Task g: Volunteer teams ready to help with evacuation A Task h: Arrange alternative school facilities Task i: Organize neighborhood info meeting B
Level 2 Moderate Wildfire Risk	Task a: Send alert with automated alert/notification system Task b: Deploy volunteer teams to evacuate people and businesses in the flood zone A Task c: Move industrial water hoses close to wildfire Task d: Use road barricades to close vulnerable roads Task e: Arrange alternative school facilities	Task f: Identify the closest water association Task g: Assemble volunteer safety supplies Task h: Coordinate a volunteer team to assist those who need help evacuating or protecting their homes A Task i: Find replacement for smoke-damaged day care center B
Level 3 High Wildfire Risk	Task a: Send alert with automated alert/notification system Task b: Provide volunteer safety supplies to volunteers Task c: Make state emergency response request Task d: Access city's water resources Task e: Use a volunteer team to assist those who need help evacuating or protecting their homes A	Task f: Designate alternative evacuation route Task g: Set up emergency shelters & supplies Task h: Place firefighting crews on standby Task i: Address neighborhood power outage B



that you want to keep. Place the remaining five cards in a pile and set them aside.

Hand out the [game boards](#).

Facilitator: Here is your game board. Please complete the header with your group information. You can select a team name. When you play this round, place the resource cards on or near each task on the game board.

Facilitator: I will now read the *Emergency Update for Round # 1*:

The foothills closest to your community have been burning for several days and your community has been blanketed with smoke. In addition, your community experiences a community challenge: a communication outage has occurred that must be addressed.

Hand out copies of [Emergency Update #1](#) to Zone A and Zone B response teams and the [Round 1 Community Challenge](#) to Zone C response team.

Facilitator: You will have 10 minutes to solve your challenges for this round.

- Zones A and B: Refer to the *Wildfire Response Guideline* and your *Emergency Update* to learn what tasks your team has to accomplish.
- Zone C: Address the tasks from the *Community Challenge*.
- All zones: Use your game board to track which resources you are using to tackle your tasks. You must come up with a plan for your group and a way to use your resources. Check off solved tasks where you have the resource card you need.

Optional creative solutions: Remember, if you don't have the required resource card, but you have at least two other cards that could work together to solve the task, you can use a creative



solution. You are accountable as to whether the cards that you are using for the creative solutions are actually solving the challenge.

Set timer for 10 minutes. Give students 2-minute and 1-minute warmings. Remind teams about the option for sharing resources towards the end of the round.

Facilitator: Time is up! Let's add up each zone's total points for Round 1.

See scoring section above for details on scoring.

End of Round 1 Reflection

Have each team share out to the whole class.

- Was your group able to complete all the tasks with the resources you had?
- In what ways could you have used your resources better or more creatively?
- Are there resources you wish you had?

Round 2 (10 minutes)

Teams stay the same for each round. Each player keeps his/her own *individual resource card*. Collect and shuffle the *community resource cards*. Hand out 13 random cards to each team. Each team gets a new game board or wipes and re-uses a laminated game board.

Facilitator: The hot, dry conditions haven't stopped and high winds are contributing to an increase in flare-ups. Look at your new *community resource cards* and pick the **eight** you want to work with. The wildfire impacts and challenges you dealt with in Round 1 are resolved. In Round 2, you only need to worry about the new wildfire impacts and new challenges that you encounter.

I will now read the Emergency Update for Round # 2:

The wildfire is moving closer to your community. In addition, your community experiences a community challenge: a major road is blocked by nearby wildfire and that will affect your community's ability to move people and supplies.

Hand out copies of [Emergency Update #2](#) to Zone A and Zone B response teams and the [Round 2 Community Challenge](#) to Zone C response team.

Facilitator: Please complete the header on your game board for Round 2. As with last round, you have 10 minutes to solve as many of your tasks as you can. Work together in your team to strategize how to use your resources wisely. Use your *Wildfire Response Guide* or *Community*



Challenge details to track which resources you need. Use your game board to mark which resources you have used. Check off solved tasks where you have the card that is needed.

Optional creative solutions: Again, if you don't have the required resource card, but you have at least two other cards that could work together to solve the task, you can use a creative solution. You are accountable as to whether the cards that you are using for the creative solutions are actually solving the challenge.

Set timer for 10 minutes. Give students 2-minute and 1-minute warmings.

Facilitator: Time is up! Let's add up each zone's total points for Round 2.

End of Round 2 Reflection

Have each team share out to the whole class.

- How did your strategy change from Round 1 to Round 2?
- What additional resources did you need that you were unable to get?
- Optional: Did you use any creative solutions?

Round 3 *(10 minutes)*

Teams stay the same for each round. Each player keeps his/her own *individual resource card*. Collect and shuffle the *community resource cards*. Hand out 13 random cards to each team. Each team gets a new game board or wipes and re-uses a laminated game board.

Facilitator: The wildfire threat continues to rise and severe effects are present in the community. Evacuations are necessary and State Emergency Response must be requested. Look at your new community resource cards and pick the **eight** cards you want to work with.

I will now read the Emergency Update for Round # 3:

The wildfire threat continues to rise and many neighborhoods are having to evacuate. Throughout the evacuations, your community experiences a community challenge: there are vulnerable people who must be evacuated.

Hand out copies of [Emergency Update #3](#) to Zone A and Zone B response teams and the [Round 3 Community Challenge](#) to Zone C response team.

Facilitator: Please complete the header on your game board for Round 3. As with last round, you have 10 minutes to solve as many of your tasks as you can. Use your *Wildfire Response*



Guide or Community Challenge to track which resources you need. Use your game board to mark which resources you have used.

Optional creative solutions: Again, if you don't have the required resource card, but you have at least two other cards that could work together to solve the task, you can use a creative solution. You are accountable as to whether the cards that you are using for the creative solutions are actually solving the challenge.

Set timer for 10 minutes. Give students 2-minute and 1-minute warmings.

Facilitator: Time is up! Let's add up each zone's total points for Round 3.

End of Round 3 Reflection

Facilitator: Rains in the foothills have helped firefighters to contain the wildfires.

Congratulations to your community for pulling together and working to protect your town!

Choose from the following discussion questions as time and interest allow. Questions can also be divided between teams or individuals in a think-pair-share format.

- Before you played the game, you tried to anticipate where you would need resources. Were the resources you thought you would need the ones you actually ended up needing? Are there choices you would have made differently if you were to play again?
- How well did the members of your zone work together? How well did the different zones work together?
- How does having played this game change what you think about disaster preparation in your community?
- Think about the dynamic in the room as zone response teams were working together to find the resources to solve their community challenges. What strategies did you use to communicate with other teams? Were other zone response teams willing to share resources and information with you, or did teams take a more competitive approach?
- What elements of the game felt like something that could happen in real life? What elements didn't feel very realistic? What can we learn about becoming more resilient from a game like this?



- Take a look at the community map. How does the distribution of buildings and parks affect the community’s vulnerability and response? How might you design things differently in the community to be more resilient?

Optional extension activities

Activity	Extension
Introduction to community resource cards	Each player selects two to three community resource cards to review and answer the question on the front of the resource card.
Creative Solutions	Each round, students can solve their tasks using a creative solution (a creative combination of community and individual resource cards), but it must fit the challenge. Some students may try to abuse the flexibility around the option to use creative solutions (e.g., they may try to use <i>Pet Carrier</i> card to address a <i>Flare-Up</i>). You can increase accountability by having zone teams report out on their creative solutions at the end of the round or have teams evaluate or vote on each other’s creative solutions. The creative solutions is an optional extension and can be omitted for younger or larger groups to simplify the game.
Model Round	<p>In some cases, it might help to run a quick model round (5 minutes) before Round 1:</p> <p>Facilitator: Let’s play a quick model round to see how the game runs. Your team has already selected eight community resource cards. Let’s play this round with just four of those cards.</p> <p>For this round, all three zones are at Level 2 Wildfire Risk. How many of the tasks for level 2 risk can your zone accomplish with the four community resource cards you chose?</p> <p>Give teams 2 minutes to play.</p> <p>Facilitator: Time is up! Is there anything you would have done differently in choosing your cards after playing this model round?</p> <p>If you play the model round, make sure the teams go back to all eight cards they chose before starting Round 1.</p>

Find more HEART Force Curriculum here:
<https://cires.colorado.edu/outreach/projects/HEARTForce>