

How Natural Disasters Discriminate

Compelling Question: How can we get to the root causes of the ways natural disasters discriminate?

Grade Level		Time	Common Core Standards
K-2	3-5	45–60 Minutes (could extend longer with group projects)	Reading: R1, R9 Writing: W7 Speaking & Listening: SL1, SL2, SL5
MS	HS		

Key Words

(See ADL's [Education Glossary Terms](#).)

accessible
bias
catastrophic
destruction
devasted
disproportionate
downgraded
epicenter
evacuate
fiercest
identity
marginalized
panicked
population
surge
survive
threatening
unprecedented

LESSON OVERVIEW

Natural disasters have dominated the news headlines lately with powerful hurricanes in North Carolina and the Caribbean, a forceful earthquake in Mexico and severe wildfires in Oregon, California and other western states. These events have had significant and damaging impacts on the people, buildings and natural environment in those locations and resulted in injury, death, destruction of homes and businesses, displacement and homelessness, loss of food, water and electricity and many other residual effects. While many people think that natural disasters don't discriminate and are "equal opportunity" catastrophes, the reality is that natural disasters impact people in different ways and tend to have a more negative and lasting effect on certain identity groups such as women, poor people, people who are disabled, people who are elderly and undocumented immigrants.

This lesson provides an opportunity for students to define and learn more about natural disasters, reflect on their own thoughts, opinions and experiences with natural disasters and consider the ways that natural disasters do discriminate in that they impact certain identity groups in disproportionate ways.

[Note to Teacher: Many young people are fascinated by natural disasters and others have deeply held fears about them, especially if they have experienced a disaster personally. When teaching this lesson, be aware of the fears and anxiety that natural disasters sometimes cause. Be realistic about the devastation caused by these events but don't be overly graphic in focusing on death and destruction. It is also helpful to make mention of all the helpers and people who assist during times of need, either in preparation for, during or after the natural disaster. Be mindful of students in your class who may have lived through a natural disaster and/or your specific geographic location, which may be more likely to experience them.]

LEARNING OBJECTIVES

- Students will define natural disaster and will learn more about several types of natural disasters.
- Students will reflect on their own opinions about their experiences of natural disasters and how they might impact people differently.
- Students will consider the ways that natural disasters impact identity groups in different ways and will do a collaborative research project on a specific disaster.

MATERIALS & PREPARATION

- Signs on pieces of paper with the following words: (1) STRONGLY AGREE, (2) AGREE, (3) IN BETWEEN/ NOT SURE, (4) DISAGREE and (5) STRONGLY DISAGREE
- [Natural Disasters: Descriptions](#) (one copy for each student)
- Five articles from Newsela:
 - “Massive wildfire tears through Oregon’s Columbia River Gorge” (September 11, 2017, <https://newsela.com/read/pnw-fires-gorge/id/34825/>)
 - “Extent of damage Hurricane Irma inflicted on Florida remains unclear” (September 12, 2017, <https://newsela.com/read/hurricane-irma-east-coast/id/34982/>)
 - “Deaths in Mexican states of Oaxaca, Chiapas and Tabasco after quake” (September 12, 2017, <https://newsela.com/read/mexico-earthquake/id/34916/>)
 - “Rising floodwaters overwhelm Houston, other parts of southern Texas” (August 28, 2017, <https://newsela.com/read/hurricane-harvey-hits/id/34413/>)
 - “Science Says: People stoking brew that makes California burn” (August 26, 2020, <https://newsela.com/read/california-fire-ecosystem/id/2001012476/>)
- [Examples of Natural Disasters](#)

PROCEDURES

 **Information Sharing: What Are Natural Disasters?**

1. Ask students: *What is a natural disaster? What words, images and phrases come to mind when you hear the words ‘natural disaster’?* Have students brainstorm the words, phrases, images and feelings that come to mind and create a semantic web based on their responses. It may look something like this:



2. Ask students: *What natural disasters have you heard about recently?* Explain that in August and September 2017, there were a number of natural disasters including: Hurricane Harvey in Houston, Texas; Hurricane Irma in the Virgin Islands and South Florida; an earthquake in Mexico and wildfires in Oregon and other western states. Additionally, in 2020, there were large, destructive wildfires that erupted across the state of California, resulting in destruction of structures and property, displacement of people and deaths.
3. Elicit and explain that a natural disaster is “an event or force of nature that usually results in serious damage and many deaths.” Then ask them to share examples of types of natural disasters and ask them to describe what they know about each. Read [Natural Disasters: Descriptions](#), asking students to take turns reading aloud. Ask students if they have any questions.

NOTE: For younger students, use definitions from [Fact Monster](#) or [BrainPOP](#).

- Point out to students that while we call these “natural disasters” because they involve nature in some way, there are ways in which humans contribute to the prevalence and severity of disasters.

Reading Activity

- Distribute the following five articles equally among the students, so that each group of students will read one of five articles. Explain that they will silently read their article, discuss it with others who read the same article and then share information about the article with the rest of the class.
 - [Massive wildfire tears through Oregon's Columbia River Gorge](#)
 - [Extent of damage Hurricane Irma inflicted on Florida remains unclear](#)
 - [Deaths in Mexican states of Oaxaca, Chiapas and Tabasco after quake](#)
 - [Rising floodwaters overwhelm Houston, other parts of southern Texas](#)
 - [Science Says: People stoking brew that makes California burn](#)

NOTE: Each of the above articles is from [Newsela](#), a website that publishes high-interest news articles daily at different reading levels from the 2nd to 12th grade. Multilingual versions may also be available. You have to register (free) to access the articles.

- Give students ten minutes to read their article and then have them sit with the other students who read the same article and engage in a brief discussion, using the following questions. Instruct one person from the group to take notes and assign one person who will report back to the rest of the class.
 - What happened?
 - What was the impact of the natural disaster on people, homes, other buildings and the environment?
 - Do you think some people were impacted more than others? If so, who and why?
 - What will be the long-term impact on the people, buildings, environment and surrounding community?
 - Is there anything that can be done to prevent damage in the future?
- Have the assigned reporters from each group share what their group learned in the article, presenting some of the responses to the questions and their discussion.

Here I Stand Activity

- Briefly explain or elicit from students the difference between facts and opinions: facts are absolutely true statements (something that truly exists or happened) and opinions are what people feel, think and believe and there can be a wide range of opinions about something.
- Explain to students that they are going to do an activity where they listen to some statements related to natural disasters and will then consider to what extent they agree or disagree with each statement. Students will indicate their opinion about each statement by positioning themselves along an imaginary line, depending upon how strongly they agree or disagree with each of the statements.
- Select a large open space and indicate the position of an imaginary line with the farthest right point representing a STRONGLY AGREE response and the farthest left point a STRONGLY DISAGREE response. In between, place AGREE, IN BETWEEN/NOT SURE, AND DISAGREE along the continuum. Hang up signs with these words on the wall (do in advance if possible).
- Read each statement below—one at a time—requesting that students take a few minutes to decide where they stand in the continuum and have them walk silently to that place and observe where others choose to stand. Explain that these statements are all about people’s experiences with and opinions about natural disasters.
- Following each statement, after everyone has chosen their spot, have students spend 2–3 minutes talking with the other students who chose to stand in the same area (based on their experiences and opinions).
 - I and/or someone in my family have experienced a natural disaster.

- When I see videos or news reports about natural disasters, I get upset and don't like to watch.
 - Natural disasters are happening more often and are more intense.
 - If you have advanced warning about a natural disaster, you should evacuate or leave the affected area.
 - People are affected and/or treated differently based on identity factors (age, race, ability, socioeconomic status, etc.) during a natural disaster.
 - Members of marginalized groups are more negatively impacted by natural disasters.
6. After the activity, lead a whole group discussion using the following questions:
- How did you make the decision about where to stand? Did you base it on opinion, facts and/or something else?
 - Were some statements easier for you to decide where to stand and some more difficult? How so?
 - Did you ever decide to change your position when you saw you did not agree with a majority of the group, or after hearing others' points of view?
 - Did this activity cause you to change your point of view about something or make you feel more strongly about your position? Please explain.
 - Do you think that natural disasters impact people differently and if so, how?



Information Sharing: Identity-Based Effects of Natural Disasters

1. Ask students: *Based on what you've heard and read so far, do you think natural disasters (in the U.S. as well as other countries) impact different kinds of people in different ways?* Explain that there are generally three stages of a natural disaster: (1) preparation and/or evacuation, (2) the natural disaster itself and (3) clean up and recovery.
2. Explain to students that there are a variety of ways that natural disasters can and do impact people differently based on aspects of their identity. These can include race, gender, age, disability, socioeconomic status, immigration status and others. Ask students to provide examples and then share some or all of the [examples of natural disasters](#) of how natural disasters impact people based on identity.

Research and Presentation Activity

1. Divide students into small groups of 4–5 students each. Each of the groups will select a natural disaster that has occurred in the past twenty years and discuss the ways in which certain groups of people (as those discussed above) may have been impacted in more severe ways. Explain that those people could include identity groups such as: (1) age (2) gender (3) race (4) socioeconomic status (5) disability (6) immigration status.
2. Have students first identify the natural disaster they will focus on. It could be one that occurred recently or one that took place over the last 25 years, either in the U.S. or anywhere around the world. Allow students access to computers, tablets and/or their phones to do preliminary research about possible natural disasters.
3. In their small groups, instruct students to brainstorm groups of people that may have been impacted differently by this particular natural disaster. At this point in their exploration, the list could include things they know for sure or what they think may have happened based on what they've learned so far and understand as key factors.

The list could look something like this:

Name/Location of Natural Disaster: Hurricane Irma (Florida, Virgin Islands)	
Group of People Impacted	How it might impact them
Elderly people	May be difficult to shop for food in advance to stock up in case supplies run out May not have family or friends close by to help them move if they need to
Disabled people	May be difficult to evacuate
People who are undocumented immigrants	Fear that they would not be allowed into shelters without ID Border Patrol checkpoints still enforced which makes evacuation scary

4. After students have created their lists, have each group share aloud one or two of their ideas so far.
5. For homework and for a longer-term group project, have the same groups do follow up research to learn more about their natural disaster, what the impact was and the extent to which the impact was felt disproportionately based on certain identity groups. The groups should also make recommendations to address the root causes of this impact, whether that includes bias and stereotypes or differentiating the needs and special requirements certain people need. The group projects should answer the following questions:
 - What happened in the natural disaster?
 - What was the long-term effect on the people, buildings, environment and the surrounding community?
 - What role does the population’s socioeconomic status (i.e. being poor) play in this?
 - Were some people impacted more than others? If so, who and why?
 - Was there bias involved?
 - Is there anything that can be done to prevent this from happening in the future?
 - What is the reason and root cause of some people being impacted disproportionately? How do you propose to turn that around?
6. If time permits, the research will culminate in a project that the small group undertakes in one of the following ways: (1) PowerPoint presentation, (2) skit or dramatic presentation, (3) video/Public Service Announcement, (4) illustration or storyboards, (5) research report or (6) annotated timeline. Have students present these in class.
7. When all the projects have been presented, engage students in a whole class discussion using the following questions:
 - What did you learn about natural disasters that you didn’t know before?
 - Would you answer some of the questions from “Here I Stand” differently now that you know more about natural disasters? How so?
 - What role does one’s class (socioeconomic status) play in their ability to evacuate and their access to needed services?
 - What role do other elements of identity play in how people are impacted by natural disasters?
 - Does it reflect something about us as a society? Please explain.

- What can we do so that certain groups of people are not adversely impacted in disproportionate ways by natural disasters?
- How can we get to the root causes of these inequities?

Closing

Have students share one thing they learned as a result of the lesson.

ADDITIONAL READING

- [5 Reasons Natural Disasters Are Worse For Women](#) (Think Progress, May 7, 2015)
- [Disasters](#) (The New York Times Topics)
- [Essential Facts About The Victims of Hurricane Katrina](#) (Center on Budget and Policy Priorities, September 19, 2005)
- [“Fear of deportation could keep Texans from evacuating for Harvey— and Trump is making it worse”](#) (Vox, August 25, 2017)
- [“The fires in California highlight—and worsen—the state’s income divide”](#) (Vox, November 15, 2018)
- [“Immigration checkpoints still in force as tens of thousands flee hurricane’s path”](#) (Think Progress, August 25, 2017)
- [Natural Disasters: When Mother Nature is Furious](#) (Pundit Café, February 15, 2017)
- [“Paradise Lost: California town of 30,000 destroyed by fast-moving wildfire”](#) (Newsela, November 12, 2018)
- [“Trapped in Irma’s path”](#) (Vice News, September 9, 2017)
- [“Why Older Adults Face More Danger in Natural Disasters”](#) (The Huffington Post, December 18, 2013)
- [“Science Says: People stoking brew that makes California burn”](#) (Newsela, August 26, 2020)

Common Core Standards

CONTENT AREA/STANDARD
Reading
R1: Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text.
R9: Analyze how two or more texts address similar themes or topics in order to build knowledge or to compare the approaches the authors take.
Writing
R7: Conduct short as well as more sustained research projects based on focused questions, demonstrating understanding of the subject under investigation.
Speaking and Listening
SL1: Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.
SL2: Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.
SL5: Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations.

NATURAL DISASTERS: DESCRIPTIONS

Drought

A drought is an extended period of months or years when an area suffers a severe shortage in its water supply. This usually occurs when a region receives consistently below average rainfall or other precipitation. It can have a significant impact on the environment and agriculture (farming) of the affected region. Although droughts can persist for several years, even a short, intense drought can cause significant damage and harm the local economy.

Earthquake

An earthquake occurs when the earth releases pent-up energy and causes the ground to shake. Earth's ground is made up of several very large pieces of land called tectonic plates. Most earthquakes occur when these plates rub against each other in some way. These same plates also create mountains when they push against each other. As the mountains are formed, earthquakes may be felt. Sometimes, people cause earthquakes when they do mine blasts or nuclear tests.

Flood

A flood is an overflow of water that covers the earth. This overflow can damage buildings and cars in its path. In a severe flood, the water can seep into houses and completely cover them, ruining everything. And, if people get caught up in the flood, they can be washed away with the flood and drown.

Hurricane

A hurricane (also called typhoon or tropical cyclone) is a giant, spiraling tropical storm with a low-pressure center that produces heavy rain and very strong winds. The center of the hurricane, also called its "eye," is typically calm but the outer edge of the eye, called the "eyewall" is where the greatest wind speeds and highest precipitation occur. Hurricanes can cause great damage to coastal regions and usually weaken when over land.

Tornado

A tornado is a violent, rotating, funnel-shaped cloud that usually extends from thunderstorms to the ground and can have wind speeds of between 50 and 300 mph. A tornado's path of damage can exceed 50 miles in some cases. Some tornadoes are clearly visible, while others are not.

Tsunami

A tsunami consists of huge waves caused by either an underwater earthquake or volcanic eruptions. These waves can get as high as 100 feet and aren't the gentle waves that you surf on. They are destructive waves that can knock down buildings, trees and anything else in their path.

Wildfires

Wildfires, or forest fires, are uncontrolled fires burning in wildland areas. Common causes include lightning, human carelessness, arson (people starting fires) or volcano eruptions. Wildfires can be a threat to those who live in rural areas and also to wildlife. Wildfires can also produce ember (sparks, ashes) attacks, where floating embers set fire to buildings at a distance from the fire itself.

Examples of Natural Disasters

How they Impact People Based on Their Identity

Race/Class: In 2005, Hurricane Katrina hit the Gulf Coast including the states of Mississippi, Alabama and Louisiana. Nearly one-fifth of the population affected by the hurricane lived in poverty. Katrina had the greatest impact on New Orleans, LA, where there was a disproportionate impact along racial lines; census data confirmed that African American people made up a disproportionate share of the hurricane's victims. 100,000 people had no car, and therefore had no ability to flee the city when the storm hit. Thousands of New Orleans residents who weren't evacuated and couldn't escape the city were left with inadequate aid and shelter, all but abandoned by officials who didn't help them due to mismanagement and a perceived lack of compassion. The hurricane killed more than 1,800 people and displaced tens of thousands more, many permanently.

Media portrayal also revealed disparities and bias. In a revealing comparison, there were two photos that turned up on the same day on Yahoo News. The first photo showed a young African-American man wading through water that had risen to his chest. He is clutching a case of soda and pulling a floating bag. The caption said that he had just been "looting a grocery store." The second photo showed a white couple up to their chests in the same murky water; the woman is holding bags of food and the caption said they were shown "after finding bread and soda from a local grocery store."

Gender: There are several ways in which natural disasters have a more widespread and negative impact on women. Researchers surveyed data from 141 countries over a 21-year period and found that natural disasters kill more women than men. According to the study, the disproportionate death tolls are explained by the fact that "natural disasters exacerbate previously existing patterns of discrimination that render females more vulnerable to the fatal impact of disasters." In addition, women are more vulnerable due to limited mobility, sexual violence, infections due to the lack of clean washing facilities, pregnancy complications and more. For more information, see [5 Reasons Natural Disasters Are Worse For Women](#).

Age: In general, disaster-related deaths are much higher for older adults due to mobility issues and not being able to move out of harm's way quickly; being slow and/or reluctant to evacuate when necessary; chronic conditions that deteriorate quickly in a natural disaster due to factors such as stress and a lack of access to medication; and homebound older adults who aren't close to family and friends may be invisible to neighbors.

One specific example is that during Hurricane Irma in Florida, widespread power failures led to the death of eight nursing home residents, ranging in age from 71–99 because there was no air conditioning. The center asked the power company to restore the power but were not considered as high a priority as other facilities like hospitals. This has led to a criminal investigation.

During the 2013 Typhoon Haiyan in the Philippines, more than a million older Filipinos were affected or displaced and in regions where victims' ages were known, one out of three people who died were over the age of 60, even though they represented less than 10% of the population.

Immigration Status: During Hurricane Harvey, families among Houston's estimated 600,000 undocumented immigrants fled their homes to escape the flooding despite their fears and anxiety about potentially being turned away at shelters or facing hostile immigration agents. Political leaders tried to reassure residents that routine immigration enforcement would not be conducted at shelters but the Border Patrol did not suspend operations at checkpoints in Texas during the storm, drawing strong criticism from human rights activists who said the decision put the lives of undocumented immigrants and mixed-status families at risk.

People who are Incarcerated: During Hurricane Irma in South Florida, nearly 4,500 inmates inside facilities in evacuation zones had not been moved. The Florida Department of Corrections evacuated dozens of prisons on Thursday and Friday, but federal, state and local officials left inmates at facilities in the Miami-Dade county's most vulnerable areas including one federal prison, one county jail, and two state prisons.