

How to Reduce the Impact of Hurricanes

Overview

Students will problem solve how to reduce the impact of hurricanes by role playing.

Estimated Time

One class period.

Materials

PowerPoint Slides 37-45

Mitigation Topics Resource

Half sheet or full sheet poster paper/markers

Culminating Activity: Essay; PowerPoint Slides 46-47

Learning Objectives

After completing the lesson, students will be able to:

- Present two research projects on hurricanes to the class;
- Summarize selected aspects learned about hurricane mitigation in a well-written essay.

Opening the Lesson

Introduce the lesson with the EQ: Can we control or plan for too much water flooding the city and its environs? (**PPT Slide 37**)

1. Use **PPT Slide 38: How to Reduce the Impact of Hurricanes** with the background information below.

Background: The risk posed by hurricanes is a function of the likelihood that a hurricane of a certain intensity will strike a coastal area and of the vulnerability of the states to the impact of a hurricane. Vulnerability includes such things, as the ability of structures to withstand the forces of a hazardous event, the extent to which a community possesses the means to organize itself to prepare for and deal with emergencies, the extent to which a country's economy depends on a single product or service that is easily affected by the disaster and the degree of centralization of public decision-making. (Primer on National Hazard Management in Integrated Regional Development Planning,

Washington, D. C., 1991, p. 12) To assess future risks, planners must study historical trends and correlate them with probable future changes.

Once the risk posed by hurricanes is understood, specific mitigation measures can be taken to reduce the risks to communities/regions.

2. Lesson 3 is about hurricane mitigation. Students will use what they know about hurricanes from Lessons 1 and 2 to plan a presentation to governors of the states of the United States at the National Governors Association winter meeting. At the meetings held in winter and summer, governors meet to discuss critical issues their states face. Students will be experts on hurricane mitigation.
3. Introduce the lesson using **PPT Slide 39** Hurricane Mitigation.

Teacher: Hurricanes are a fact of life for millions of people who reside on coastal areas. Scientific advances in understanding the behavior of hurricanes have dramatically improved the ability to prepare for them and protect homes and businesses when they do strike. In this lesson, you will work in your storm groups to plan a presentation you will deliver before governors of the 50 states of the union at their annual winter meeting. Each group will have 2 topics for their presentation.

Developing the Lesson

4. **PPT Slide 40 Advising Governors About Hurricane Mitigation** outlines the group task.

Tell students they are going to make a presentation to governors of the 50 states of the U.S. about hurricane mitigation. Once again they will be “experts” on specific topics.

PPT Slide 41 lists the presentation components:

- Introductory statement about the need for mitigation strategies
 - A list of hazards and effects/impacts of hurricanes as it relates to their topic
 - Suggestions for preparedness in the topic assigned
5. **PPT Slide 42: Presentation Details** gives more information about the task.
 - What: A presentation to be given before governors of 50 states (Poster included)
 - Where: At the annual winter meeting of the National Governors Association
 - Title: Hurricane Preparedness: Prevention and Mitigation Measures
 - Who: Group members plan and design a presentation
 - Length: 6-10 minutes
 6. **PPT Slide 40: Topics.** Either assign the topics to groups or allow students to draw topics on strips of paper. Use **Materials: Mitigation Topics**. Copy,

cut into topics. If drawing for topics, place strips of paper in a small basket or other container. Go by each group and choose a student to draw for the group.

7. Have students move to the original storm group. (**PPT Slide 44**)
8. The Mitigation Topics resource has suggestions for researching the topic. You or your students may locate others. The ones with the topic address the topic and are a starting point for preparing presentations. Using the sources provided will save time. There are 2 topics per sheet.
9. Allow 30 minutes for groups to find their topic using the internet, take notes and write a draft of their presentation. Each of the two topics will be presented in 3-5 minutes for a total presentation of 6-10 minutes. Students will create a poster with the title of their topic and a brief outline of their presentation.
Materials: Poster Sheets (bulletin board sheets or easel pad sheets), markers.

Concluding the Lesson

10. Presentations. Use **PPT Slide 45 Presentations to Governors** as a reminder before the presentations begin. Each storm group will have 6-10 minutes to present. Posters will be used to guide the presentation. Remind students to open their presentation addressing the audience, i.e., governors of the 50 states. Students will write their names on their posters. Use the posters for a grade.

At the end of each presentation, have students display their posters on classroom walls.

Culminating Activity

11. Have students respond in writing to the following prompt: **PPT Slide 46: Essay *Preparing for the Next Hurricane that Makes Landfall in Texas.***

Students will write from the perspective of someone who would be involved in hurricane preparedness. Use **PPT Slide 47: Writing From the Perspective of...** to show them the choices they have to select. Hint: They might choose a role that fits what their presentation was about.

Mitigation Topics

Flooding

amtrustfinancial.com How to Reduce Flood Damage From Hurricanes and Storms

NCSL.org/flood mitigation

High Winds

Weather.gov/wrn/hurricane-hazard

Hurricanescience.org/hurricanewindsatlandfall

Evacuation

directenergy.com/hurricane-evacuation-plan Create a Hurricane Evacuation Plan for Your Family

OSHA.gov/hurricane/preparedness

Wikipedia: Hurricane Evacuation

Hurricane Relief

Disaster Relief Agencies/organizations; Red Cross; Wikipedia

FEMA.gov/coordinated-state-local-and-federal-response-hurricane-michael

Communication/Warning Systems

Civicplus.com/hurricane-emergency-preparedness-and-citizen-communications

Warning Systems

Weather.gov/safety/hurricane-ww; National Hurricane Center

Protecting Hospitals

beckershospitalreview.com/how-healthcare-facilities-prepare-for-hurricanes-and-other-natural-disasters (October 30, 2017)

Medicalxpress.com/2019-08-hospitals-hurricanes (August 30, 2019)

Land Use (New Land Development)

harterresearchinstitute.org/news/column-recovering-better-after-Harvey-needs-smart-land-use-planning

citylab.com/Houston-zoning

theatlantic.com/how-to-build-hurricane-proof-cities

Infrastructure

phy/organ.structures and facilities (buildings, roads, bridges, water, sewer systems, power, air-ports)

b.air.com/infrastructure-damage-hurricanes

bidnet.com/hurricane-Harvey-irma-infrastructure-damage-texas

Home Retrofitting

Ready.gov/hurricanes Returning Home After a Hurricane

Returning Home After a Hurricane

Hurricanesafety.org; National Hurricane Survival Initiative

Travelers.com/returning to your property after a hurricane

Shelters

crcog.org American Red Cross Sheltering Handbook: Disaster Services

tcpalm.com/officials-weigh-options-hurricane-shelters

Feeding Those in Shelters

Emergency Food and Shelter Program/FEMA.gov

Discover.pbcgov.org Public Safety-Emergency Management

Safety for Citizens and Pets

cdc.gov/be-safe-after Stay Safe After a Hurricane or Other Tropical Storm

ready.gov/hurricane preparedness

Preparedness for General Public

cdc.gov/disasters/hurricanes/before
