



Hurricanes 3–5

Hurricane Safety



Visit the American Red Cross Web site
at www.redcross.org/disaster/masters

LESSON PLAN 3

Hurricane Preparation

When students know what to do during a Hurricane WATCH and WARNING, they will understand how they can help their families and school be ready.

Key Terms and Concepts

forecast	preparation	tropical disturbance
hazard	re-intensify	tropical storm
hurricane WARNING	storm surge	tropical wave
hurricane WATCH	tropical depression	

Purpose

To give students and their families an understanding of what they must do during a hurricane WATCH and a hurricane WARNING

Objectives

The students will—

- Discuss the difference between a WATCH and WARNING and what one must do in response.
- Read to define and understand the following terms: tropical wave, tropical depression, tropical storm and hurricane.
- Assess the importance of tracking a hurricane to the safety of the communities that may be in its path.
- Use *Atlantic Hurricane Tracking Map* and *Fact Sheet for Hurricane Georges* from Lesson Plan 1 to write and present a hurricane news broadcast.
- Find storm music to use before and after their storm broadcasts.
- Calculate to see if there's a correlation between the wind speed of a storm and the distance that storm traveled each day. (Linking Across the Curriculum)
- Research other hurricanes and report on how people prepared before the hurricanes made landfall, the hurricanes' movements and the damage they caused. (Linking Across the Curriculum)
- Prepare a list of hazards that must be eliminated before a hurricane hits.
- Conduct a hazard hunt inside the school and on the school grounds to find potential hazards; suggest ways to remove or lessen the hazards; and identify hazards they can address and those that must be assigned to adults.
- Create a report card of school hurricane hazards and write a diplomatic letter to school administrators to share their data and assessment.



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- Use the class list of hazards to conduct a hurricane hazard hunt at home and prepare a list of “things to do” in the event of a hurricane WATCH. (Home Connection)
- Research community hazards and emergency warning systems to write group reports on community preparedness. (Linking Across the Curriculum)

Activities

“In Today’s News...”

“Hazard Hunt”



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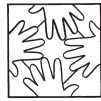
Hurricane Preparation

Materials

- Data from completed *Atlantic Hurricane Tracking Map*, from Lesson Plan 1
- *Fact Sheet for Hurricane Georges*, from Lesson Plan 1
- Video camera and tape (if available)



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"In Today's News..."

SET UP 30 minutes **CONDUCT** two 30-minute classes

Language Arts: Media Literacy; Science: Earth Science

1.



Use the material in the Hurricane Safety section of the Hurricane Background to guide the students in discussing how a WATCH and a WARNING differ.

- What is a hurricane WATCH? (A hurricane WATCH is an official alert issued by the National Weather Service when there is a threat of hurricane conditions within 24 to 36 hours.)
- What will they do if their area is under a hurricane WATCH? (monitor official weather conditions; make sure the family disaster supplies kit is ready, consider their evacuation plans, be ready to cover their windows, etc.)
- What is a hurricane WARNING? (A hurricane WARNING is an official emergency alert issued by the National Weather Service when hurricane conditions are expected within 24 hours or less.)
- How would their actions change if the report was for a hurricane WARNING? Explain. (In addition to the actions taken during a hurricane WATCH, they will evacuate if they live in a mobile home or if area officials issue an evacuation order; make sure flashlights are ready for use; cover all windows with hurricane shutters or plywood, etc.)

2.



Have students research the Internet to find the definitions for each of the following types of storm:

- Tropical Wave (A tropical wave is a weak area of low pressure without defined circulation.)
- Tropical Disturbance (If a tropical wave becomes more organized, lasts at least 24 hours and is accompanied by heavy rains and winds, it is called a tropical disturbance.)
- Tropical Depression (If a tropical disturbance continues to develop into an organized area of low pressure with sustained winds of at least 38 miles [61 kilometers] per hour, it is called a tropical depression.)
- Tropical Storm (If the wind speed of a tropical depression reaches 39 to 73 miles [63 to 117 kilometers] per hour, it is considered a tropical storm and is assigned an official name by the National Weather Service.)
- Hurricane (When the winds of a tropical storm reach a constant speed of 74 miles [119 kilometers] per hour or more, it officially is designated a hurricane.)



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What kind of preparations do students believe would be necessary to protect their families and their community against each of the storms listed above? (Any answers that include monitoring weather reports, ensuring that the family disaster supplies kit and plan are ready, and carefully following any directions given by weather officials, are correct.)

3. Meteorologists track hurricanes in order to prepare people for a hurricane's strike. Why do students think this is an important part of hurricane preparation? (A hurricane's path can be very erratic, making it difficult to accurately pinpoint its landfall. Only by tracking the storm can communities know when and how to prepare and whether to order evacuation. If people who are not at risk evacuate, roads may become too crowded for those who must leave.) Invite students to think of news features—and information that could be carried on the news—to help people as they watch for the arrival of a tropical weather event, such as a hurricane.
4. Using the data from the tracking and plotting activity (Lesson Plan 1, *Atlantic Hurricane Tracking Map* and *Fact Sheet for Hurricane Georges*), tell students they are going to work on the ideal weather report for the approaching storm, Hurricane Georges.
5. Divide the class into news teams of five students. Each team must have the following personnel:
 - Director:** supervises and instructs the reporters and technicians during the making of their special weather broadcast
 - News Anchor:** opens the broadcast with greetings, identification and date, and ties the reports together with short introductions
 - Broadcast Meteorologist:** reports current weather conditions (including wind speed) and forecasts expected weather conditions, using storm nomenclature (tropical wave, depression, storm and hurricane)
 - Guest Hurricane Expert:** provides hurricane background information and predictions
 - Technical Crew:** provides support of all kinds to the director and the reporters, including cue cards and props
 - Camera Person:** works the camera
6. Suggest that the technical crews find music that is suggestive of storms to enhance the broadcast; for example, *A Night on Bald Mountain* by Modest Mussorgsky, arranged by Nikolay Rimsky-Korsakov; the Storm Movement of Ludwig van Beethoven's Symphony No. 6; Beethoven's piano sonata *The Tempest*; or the third concerto in *The Four Seasons* by Antonio Vivaldi, "Autumn."
7. Divide the descriptions of the days of Hurricane Georges (see *Fact Sheet for Hurricane Georges*) evenly among the groups.



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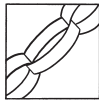
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Wrap-Up

(1–2 class periods)

Have the first group present the weather forecast for the first day of the hurricane. Continue with a report for each day of the hurricane in consecutive order. Invite students to join in a friendly critique of each team's broadcast. What did they do really well and what could they have improved?



Linking Across the Curriculum

Mathematics: Calculation

Instruct the students to calculate the difference in the wind speeds of Hurricane Georges from day to day using *Fact Sheet for Hurricane Georges* and compare this to the distance the storm travels each day using *Atlantic Hurricane Tracking Map*. *Is there a correlation? Explain.*

Language Arts: Research

Have the students research other hurricanes and report on how people prepared before the hurricanes made landfall, the hurricanes' movements, and the damage they caused.



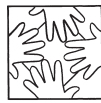
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"Hazard Hunt"

SET UP 10 minutes CONDUCT 30 minutes

Social Studies: Civics; Language Arts: Writing

-  If possible, have the class play through "Hurricane House" from the Federal Emergency Management Agency at www.fema.gov/kids/games/hurhouse/index.htm to learn about some of the possible hazards to consider when preparing for an oncoming hurricane. Why do students believe that the dog or the skateboard is a potential hazard?
- As a class, discuss possible hurricane hazards the students might find at school. Working together, guide them in the preparation of a list of possible hurricane hazards at school. (Answers may include the following information: Ordinary objects inside and outside a building can cause injury or damage during a hurricane. Anything that can move, fall, break or cause a fire is a potential hazard. For example, windows can be broken by wind-driven debris or by the storm surge; tree limbs can break away and bring down electrical wires; bikes, trash containers, outdoor furniture, and small objects can become missiles in the wind, damaging whatever they hit.)
- Have groups of students use the list to inspect different areas of the school and grounds for potential hazards. Add any new hazards to each list.
- Each group will share its findings after the school hazard hunt. What kinds of things could be done to eliminate the hazards they found? What could be done to make the areas safer? Which of those tasks could the students handle and which ones must be accomplished by adults? Explain. (Some examples of tasks that could help in preparing for a hurricane: cut diseased or dead limbs from trees; buy hurricane shutters or prepare plywood for window coverings; move trash containers and movable playground equipment indoors during a hurricane WATCH.)



Wrap-Up

Have the class as a whole translate the data they collected on potential hazards in and around the school into action they believe the school must do in preparation for a possible hurricane. Create a class report card of school hurricane hazards and send it to the school administration.

Guide students in framing their information and suggestions in diplomatic language. Make sure they offer to help with tasks they can handle.



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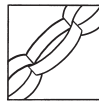


Home Connection

Have the students take home copies of the class list of hurricane hazards for a home inspection, inside and out. Ask the students and their families to list potential hazards, make a plan to correct potential problems and compile a list of things to do during a hurricane WATCH.

At school, ask the students to share their experiences in finding potential hurricane hazards with their families. For what specific tasks could the students be responsible during a hurricane WATCH? (Examples may include making sure outdoor furniture is stored securely, bringing pets inside and setting up a safe place for them.)

TEACHING NOTE You may want to give students a *Masters of Disaster* hurricane sticker after they discuss how to correct potential hazardous situations.



Linking Across the Curriculum

Social Studies: Civics; Language Arts: Writing

Assign the students to survey the community for potential hurricane hazards, such as vacant lots with debris that might fly in the wind, dead trees or diseased tree limbs. Help them translate the data they collected on potential hazards in and around the community into actions they believe the community members and leaders must take in preparation for a possible hurricane. Have the class create a class report card and send it to the local fire department or emergency manager.

Have the students research and report on the community emergency warning system for hurricane WATCHES and WARNINGS.



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