

Inside the School

Hurricane Lesson Plan

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Special Report

Inside the School

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HURRICANE LESSON PLAN

In August of 2005 Hurricane Katrina wreaked its destruction throughout New Orleans and the Gulf Coast region. As the storm approached, news organizations tracked Katrina's progress around the clock. Americans were mesmerized by the power of the storm. The reality however is that hurricanes have belted North America and its southern islands since long before Hurricane Katrina hit New Orleans. The citizens of hurricane zones have understood the power of these powerful hurricanes long before these storms became media darlings. Hurricanes blow for thousands of miles before reaching land; they flatten any weak or poorly built structure, and they leave behind massive areas of flooding. These storms destroy infrastructures and stifle local economies. They also leave the average person wondering where and how these storms generate such power.

Hurricanes form in the warm ocean water of the tropics. They begin as tropical storms and advance towards hurricane stage as they gain moisture and strength over the open waters of the sea. At the middle of this tropical disturbance is its eye, a surprisingly calm area that averages about 20 miles in diameter.

Surrounding the eye however is a storm of unfathomable power. Hurricanes can be almost 600 miles across and produce winds ranging from 75 to 200 mph. These massive storms, which form sometimes thousands of miles away, have long devastated North America's southern and eastern shorelines, destroying property, wrecking wildlife habitat, and threatening human life. Upon closer investigation however, the problems these storms create are felt well beyond the area of immediate destruction.

The hurricane season typically runs from June 1 through November 30. Although the hurricane season can bring parts of our nation to a standstill, teachers can use the media's fixation with hurricanes to observe, research, and investigate the dramatic universal mystic and power of hurricanes in North America.

This lesson plan is designed for students in any discipline, grades 7-12. Allow three days to complete the lesson.

OBJECTIVES

- Students will develop a basic knowledge of the physical make-up of a hurricane. Students will recall specific information about a hurricane's origin, structure, and life cycle.
- Students will record and compare meteorological hurricane data across local, regional, and national areas.
- Students will investigate and understand the economic impact of hurricanes locally, regionally, and nationally.
- Students will produce a multi-media production demonstrating a hurricane's cycle.
- Students will research the building advancements in earthquake zones and then compare those to advancements made in hurricane zones.

MATERIALS

- Access to presentation software, such as PowerPoint
- Access to an interactive whiteboard
- Access to the Internet
- Readings

PROCEDURES

1. *Journal Entry: What do we know?*

Based upon what you already know about hurricanes, write a short response to the following quote: "Maybe we can get rid of the phrase minimal hurricane. There is no such thing as a minimal hurricane" (Ben Nelson).

After finishing the journal entry ask students to share their ideas (writing) with the class. The above entry is designed to elicit ideas, facts, conclusions, misconceptions, and possibly even analysis about the "nature of a hurricane."

2. *Pre-Lesson Quiz:*

Using an interactive whiteboard (if available) log into [Nova's Science Now Website](#). The site provides a five-question interactive quiz that tests a student's preliminary knowledge about hurricanes.

If an interactive whiteboard is not available, then print out a copy of the quiz and have the students write out their answers.

3. *Building Knowledge:*

Provide facts, statistics, and information about hurricanes.

- Through access to technology, a teacher will produce an interactive lesson that discusses the origin, structure, and life cycle of a hurricane. Including still and video images will demonstrate the power of hurricanes and show the historical effect they have had on North America. Choose one of the following technologies to produce an interactive lesson.
 - PowerPoint
 - Interactive whiteboard
 - Digital Story

4. *Research for Learning*

- Most students already know the destructive force of a hurricane. They have seen the videos, the photos, and some have even read the stories. Few however will make the connection that hurricanes have long-range meteorological and economic consequences across many regions.
- Take students to a computer lab with Internet capabilities. Provide each student with a worksheet that asks to find answers to specific questions.
 - Questions will focus on several specific areas:

- weather data
 - Storm's path
 - Storm's duration
 - Storm's ramifications
 - economic data
 - Local damage
 - Regional damage
 - National damage
 - Effect on jobs

 - historical data, facts, and information relating to strong, memorable hurricanes.
 - Strongest storms on record
 - Most expensive storms
 - Local, regional, and national response

 - architectural ingenuity: compare architecture (infrastructure) in San Francisco to New Orleans.
 - What changes did San Francisco make after the earthquake of 1908?
 - What changes has New Orleans (and the Gulf Coast) made since Hurricane Katrina?
- Students will return to the classroom and report their findings to the class.

ASSESSMENT

Students will choose one of the following projects to complete:

- **Multi-media presentation:** demonstrate the life cycle of a hurricane.
- **Visual presentation:** (graph, table, chart, poster) comparing meteorological data across regions and /or across hurricanes.
- **Digital Story:** using images, words, music, and vocal description, tell the story of a hurricane or its aftermath.
- **Digital Story:** using images, words, music, and vocal description, create a visual representation of the architecture and/or infrastructure that will need to be developed in order to minimize a hurricane's impact.
- **Essay:** write an expository essay describing how a hurricane forms and what needs to happen in order for a hurricane to finish.

RESOURCES

How Stuff Works: How Hurricanes Work.
<http://www.howstuffworks.com/hurricane.htm>

Hurricane & Storm Tracking for the Atlantic & Pacific Oceans
<http://hurricane.terrapin.com/>

National Weather Service. National Hurricane Center.
<http://www.nhc.noaa.gov/pastall.shtml>

NOAA Climate Program Office: Hurricane Education Materials
<http://www.climate.noaa.gov/index.jsp?pg=./education/hurricanes/materials.jsp>

NOAA Climate Program Office. Understanding Climate Variability and Change to Enhance Society's Ability to Plan and Respond
<http://www.climate.noaa.gov/index.jsp?pg=./education/hurricanes/resources.jsp>

Nova: Science Now.
<http://www.pbs.org/wgbh/nova/sciencenow/3204/02.html>

Web Weather for Kids: Hurricanes
<http://eo.ucar.edu/webweather/hurricanehome.html>



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