



Hurricanes

A 5 Day Unit Plan

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2nd grade

Unit Overview

Unit Description:

The focus of this unit is to combine the students' experiences of Hurricane Katrina with the study of the formation of hurricanes and their effects in order to prepare for future hurricanes. The students will be able to explain how hurricanes form, the effects of storms on people and the land, and develop a preparedness plan for their families and homes.

Students Understandings:

Students will be able to understand the events of Hurricane Katrina and its aftermath. Students will be able to explain how hurricanes are formed, which areas they primarily hit, the categories of hurricanes and the tremendous effects of hurricanes on the people and land of Louisiana. Students will be able to apply their knowledge by developing an emergency plan in the event of a hurricane in order to keep their homes and families safe.

Guiding Questions:

1. Can students recall events from Hurricane Katrina?
2. Can students identify regions of Louisiana impacted by Hurricane Katrina?
3. Can students describe the effect of Hurricane Katrina on Louisiana?
4. Can students identify the primary months in which hurricanes develop?
5. Can students identify the primary areas of the United States and Louisiana that are affected by hurricanes?
6. Can students categorize hurricanes based on their strength?
7. Can students name the chief components of a hurricane?
8. Can students describe the effects of hurricanes on land and people?
9. Can students identify items needed to prepare homes for hurricanes?

Summative Assessment:

At the conclusion of the unit, the students will create a brochure that will show their knowledge of hurricane formation, the areas most affected by hurricanes and things their families can do to prepare for the storms. The students will use the brochure to guide a discussion with their families about preparing for a possible hurricane in Baton Rouge.

Day One

Title: Memories of Hurricane Katrina

Grade Level: 2nd grade

Integration of Content Areas: Language Arts

- Students will create a poem about their memories of Hurricane Katrina

Standards:

ESS-E-A2 Understanding that approximately three-fourths of the Earth's surface is covered with water and how this condition affects weather patterns and climates (Earth Science)

ESS-E-A3 Investigating, observing, and describing how water changes from one form to another and interacts with the atmosphere (Earth Science)

ESS-E-A4 Investigating, observing, measuring, and describing changes in daily weather patterns and phenomena (Earth Science)

H-1A-E3 Identifying and using primary and secondary historical sources to learn about the past (History)

E-1A-E1 Recognizing that limited resources require people to make decisions (Economics)

Behavioral Objectives:

- Students will be able to recall events during Hurricane Katrina
- Students will be able to identify pictures of damaged areas and the current rebuilding attempts

Daily Procedures:

1. TTW ask students to recall the events of Hurricane Katrina
2. TSW write a paragraph about their family's experience during the storm
Ex. Fallen trees, loss of electricity, etc.

3. TT and TSW discuss their memories of the storm
4. TTW read *When the Flood Comes: A Hurricane Katrina Story* by Brenda LeBlanc
5. TSW discuss the events in New Orleans immediately following the storm
6. TTW guide the discussion by asking questions such as:
 - a. How would you have felt if you were in New Orleans?
 - b. Why do you think the families chose to stay in New Orleans?
 - c. What would you have done?
7. TSW view a PowerPoint presentation with pictures of damaged areas in New Orleans and the Gulf South
8. TSW view pictures of the rebuilding efforts currently taking place
9. TSW discuss the changes in Louisiana following the storm

Language Arts Integration:

- TSW conclude by writing a cinquain poem about Hurricane Katrina. The students can choose to write about their experiences or what they have learned about the storm's effect on others in Louisiana.

Materials:

- *When the Flood Comes: A Hurricane Katrina Story* by Brenda LeBlanc



- Paper
- PowerPoint presentation (see attached)

Evaluation:

- Students will write a cinquain poem about Hurricane Katrina. This will show the students' understanding of the storm and the events that occurred immediately afterward.

Day Two

Title: Hurricane Formation

Grade Level: 2nd grade

Integration of Content Areas: Language Arts and Math

- Students will alphabetize names of past hurricane names
- Students will answer math questions related to hurricanes

Standards:

ESS-E-A2 Understanding that approximately three-fourths of the Earth's surface is covered with water and how this condition affects weather patterns and climates (Earth Science)

ESS-E-A3 Investigating, observing, and describing how water changes from one form to another and interacts with the atmosphere (Earth Science)

ESS-E-A4 Investigating, observing, measuring, and describing changes in daily weather patterns and phenomena (Earth Science)

H-1A-E3 Identifying and using primary and secondary historical sources to learn about the past (History)

G-1A-E2 Locating and interpreting geographic features and places on maps and globes (Geography)

Behavioral Objectives:

- Students will be able to explain the formation of hurricanes
- Students will be able to plot hurricanes
- Students will be able to create a "hurricane"

Daily Procedures:

1. TSW create KWL charts in small groups. Each group will complete a KWL chart about the following topics related to hurricanes:
 - a. Hurricane formation

- b. Saffir-Simpson hurricane categories
- c. Areas affected by hurricanes
2. TTW review information and questions recorded by students in order to assess the students' prior knowledge
3. TSW visit www.weatherkidz.com/hurricane1 and complete a WebQuest activity in order to learn about hurricane formation, how hurricanes develop and the Saffir-Simpson hurricane categories
4. TSW create a hurricane in groups using water, food coloring, a bowl and a spoon
 - Students will begin by stirring a large bowl of water in a counter clockwise motion
 - Once the water has started swirling, the TTW add several drops of food coloring
 - TSW be able to see the colored bands in the water similar to the bands of rain in a hurricane
- Complete directions can be found at www.nationalgeographic.com/ngkids/trythis/tryfun3.html
5. TT and TSW discuss the bands of rain and wind that accompany hurricanes. TSW identify areas of Louisiana in which stronger bands hit during Hurricane Katrina.
6. TTW introduce the idea of tracking hurricanes using a grid. TSW view a hurricane tracking map.
7. TSW practice tracking hurricanes using a large grid on the floor. TSW use a paper cutout of a hurricane to track historical storms' migration across the Atlantic Ocean and Gulf of Mexico.



Language Arts Integration:

- Students will work with a partner to alphabetize the names of past storms

Math Integration:

- Students will answer math questions related to hurricanes
 - Example: Tropical storms officially become hurricanes when they reach 74 miles per hour. Tropical Storm Z currently has winds of 59 miles per hour. How much do the winds of Tropical Storm Z need to speed up in order for the storm to become a hurricane?

Materials:

- KWL charts
- Computers with Internet access
- WeatherWizKids WebQuest (see attached)
- Water
- Mixing bowl
- Food coloring
- Large spoon
- Tape
- Paper cutout of hurricane

Evaluation:

TTW will collect anecdotal notes while students are participating in various activities throughout the day. In addition, TTW use a checklist to determine the student's ability to track a hurricane using a grid.

Day Three

Title: Effects of Hurricanes

Grade Level: 2nd grade

Integration of Content Areas: Art

- Students will use various colors of paint to illustrate hurricanes

Standards:

ESS-E-A2 Understanding that approximately three-fourths of the Earth's surface is covered with water and how this condition affects weather patterns and climates (Earth Science)

ESS-E-A3 Investigating, observing, and describing how water changes from one form to another and interacts with the atmosphere (Earth Science)

ESS-E-A4 Investigating, observing, measuring, and describing changes in daily weather patterns and phenomena (Earth Science)

G-1D-E3 Describing the locations, causes and effects of natural disasters on the environment and society (Geography)

Behavioral Objectives:

- Students will be able to identify and describe the effects of hurricanes on the land and people of Louisiana
- Students will be able to identify characteristics of structures that could withstand the effects of a hurricane

Daily Procedures:

1. TSW view video footage of Hurricane Katrina from www.hurricanevideo.com/katrina
2. TSW discuss the effects of Hurricane Katrina on the environment of Louisiana
3. TSW work with a partner to create a model house that could withstand hurricane force winds and rain. TSW use paper, straws, Legos and other materials to construct their model houses.

4. TSW explain why they believe their home could withstand a hurricane to the class.
5. TTW use a leaf blower to demonstrate the effects of a hurricane on coastal structures.
6. TSW individually write a paragraph about the house they constructed. TSW include details, such as, what materials they used, why they chose the materials, and what happened during the "storm".
7. TTW lead a discussion about structurally sound buildings that can make it through hurricane forces and buildings in our community that may and may not make it through a hurricane.

Art Integration:

- Students will use tempera paint to create the swirling bands of a hurricane
- Groups of students will create hurricanes of different sizes and explain in which Saffir-Simpson category their storm would fall

Materials:

- Computer with Internet access
- Legos
- Straws
- Paper
- Toothpicks
- Leafblower
- Paper
- Tempera paint
- Drawing paper
- Student participation rubric (see attached)

Evaluation:

- Students will write a paragraph about the house they constructed. Through the paragraph, the teacher will be able to assess students' understandings of the strength of hurricanes and structures that can withstand the storms. Students will also be assessed on their participation and contributions to their group while building and designing their houses.

Day Four

Title: Hurricane Preparedness

Grade Level: 2nd grade

Integration of Areas: Cooking

- Students will plan a meal that can be cooked without using electricity

Standards:

E-1A-E1 Recognizing that limited resources require people to make decisions (Economics)

ESS-E-A2 Understanding that approximately three-fourths of the Earth's surface is covered with water and how this condition affects weather patterns and climates (Earth Science)

ESS-E-A3 Investigating, observing, and describing how water changes from one form to another and interacts with the atmosphere (Earth Science)

ESS-E-A4 Investigating, observing, measuring, and describing changes in daily weather patterns and phenomena (Earth Science)

G-1D-E3 Describing the locations, causes and effects of natural disasters on the environment and society (Geography)

Behavioral Objectives:

- Students will be able to identify items needed during a storm
- Students will be able to discuss the roles of community leaders before, during and after a hurricane
- Students will be able to identify evacuation routes in their community and throughout the state

Daily Procedures:

1. TSW begin by watching "Everyone Prepares for a Hurricane on Sesame Street"

2. Following the video, TSW discuss what the Sesame Street characters did in order to prepare for the hurricane
 3. TTW lead a discussion about what each student and their families can do to prepare their homes in case of a hurricane
 - a. Remove debris from yard
 - b. Board up windows and/or doors
 - c. Move furniture to a higher floor
 - d. Move vehicles to higher elevation
 - e. Purchase food
 - f. Prepare a hurricane kit
 4. TSW visit www.fema.gov/kids to develop a list of items they would need in a hurricane
 5. TTW lead the students in a discussion about the various community leaders who play a role in a community before, during and after a hurricane
 - a. President
 - b. Governor
 - c. Mayor
 - d. Firemen
 - e. Policemen
 - f. TV and radio newcasters
- **The goal is for students to feel safe in the event of a hurricane. The students should understand the roles of the community leaders in securing their homes and neighborhoods in order for life to return to normal.
6. TSW identify evacuation routes throughout the state. TSW identify Baton Rouge on a map and find the appropriate evacuation route the students' families would take in the event of a hurricane.

Cooking Integration:

- TSW be given the components of various meals including canned goods, fruit, vegetables, milk, hotdogs, boxed goods, and raw meat. The students will be asked to prepare an edible meal without using electricity.

Materials:

- "Everyone Prepares for a Hurricane on Sesame Street" VHS tape
- Computer with Internet access

- Louisiana road map
- Louisiana evacuation routes
- Various canned goods
- Fruit
- Vegetables
- Milk
- Hotdogs
- Various boxed goods
- Raw meat

Evaluation:

- The students' understanding of material presented will be assessed through anecdotal notes.

Day Five

Title: Assessment

Grade Level: 2nd grade

Integration of Areas: Language Arts and Art

- Students will use writing skills to develop an emergency preparedness brochure
- Students will use art skills to illustrate emergency brochure

Standards:

E-1A-E1 Recognizing that limited resources require people to make decisions (Economics)

ESS-E-A2 Understanding that approximately three-fourths of the Earth's surface is covered with water and how this condition affects weather patterns and climates (Earth Science)

ESS-E-A3 Investigating, observing, and describing how water changes from one form to another and interacts with the atmosphere (Earth Science)

ESS-E-A4 Investigating, observing, measuring, and describing changes in daily weather patterns and phenomena (Earth Science)

G-1D-E3 Describing the locations, causes and effects of natural disasters on the environment and society (Geography)

Behavioral Objectives:

- Students will demonstrate their knowledge of hurricane formation, effects and preparedness by creating a hurricane brochure

Daily Procedures:

1. TTW lead a review of information students have learned throughout hurricane unit
2. TSW create a brochure to inform their families about hurricanes. Prior to beginning the brochure, TTW outline the criteria for the

brochure and explain the rubric that will be used to grade the brochure.

- The brochure must include:
 - How hurricanes are formed
 - Locations in Louisiana which are typically affected by hurricanes
 - Effects of hurricanes on people
 - Effects of hurricanes on Louisiana land
 - Items needed in a family hurricane kit
 - Evacuation routes for the student's family
- 3. Once the students have completed the brochures, they will use the brochure to talk to their families about preparing for a possible hurricane.

Materials:

- Paper
- Markers
- Pencils
- Crayons
- Brochure rating scale (see attached)

Evaluation:

- TTW assess students' understanding through their brochure. A rating scale will be used to grade the students' brochures.