# Assignment Summary

For this assignment, you will investigate a timeline of warnings and decisions made during the Hurricane Katrina disaster. Then you will research hurricane forecasting and advanced warning systems and write a brief essay to report your findings.

Background Information

A natural disaster is a natural event that can cause great damage and/or loss of life. Floods, earthquakes, tsunamis, forest fires, tornadoes, and hurricanes are all natural disasters.

Hurricanes are the most violent storms on Earth. Depending on where they occur, they can be called typhoons or cyclones. Hurricanes form over warm ocean waters near the equator. Most hurricanes happen in the fall because the ocean waters have been warmed all summer long.

The warm, moist air over the ocean rises upward from near the surface. As the warm air rises, less air is near the surface, which makes an area of low pressure. Air from surrounding areas pushes into the low pressure area and becomes warm and moist—that air rises, too. As the warm air continues to rise, air swirls in to take its place. The moist air rises and cools off, making clouds form. The heat from the ocean and the water evaporating from the surface make the whole system of clouds and wind spin and grow. The system rotates faster and faster, and an eye forms in the middle. The eye is calm. If the rotating winds reach 39 miles per hour, the storm is called a tropical storm. When the winds reach 74 miles per hour, the storm is called a tropical cyclone, or a hurricane.

When hurricanes hit land, they become weaker because they no longer are above warm ocean water. As they move inland, they can drop many inches of rain. The winds may cause much damage before the hurricane dies out.

Tropical cyclones are categorized according to their wind speeds, the damage they create on land, and the storm surge, which is a rising of the sea caused by cyclones. Hurricanes can cause floods with the rain they bring onshore. The winds cause great damage, knocking down trees, power lines, and buildings.

Tropical cyclone categories:

|  |  |  |  |
| --- | --- | --- | --- |
| **Category** | **Wind Speed (mph)** | **Damage at Landfall** | **Storm Surge (feet)** |
| 1 | 74–95 | Minimal | 4–5 |
| 2 | 96–110 | Moderate | 6–8 |
| 3 | 111–129 | Extensive | 9–12 |
| 4 | 130–156 | Extreme | 13–18 |
| 5 | 157+ | Catastrophic | 19+ |

 Materials

* Computer with Internet access
* *14 Days: A Timeline* article

# Assignment Instructions

For this project, you are expected to submit two (2) items:

1. Completed *Tracking Hurricane Katrina* chart
2. Brief essay to summarize your findings about hurricane forecasting and advance warning systems for hurricanes

**Step 1: Prepare for the project.**

1. Read through the guide before you begin so you know the expectations for this project.
2. If anything is not clear to you, be sure to ask your teacher.

**Step 2: Read the background information about hurricanes.**

a) Be sure you can answer these questions:

1. How do hurricanes form?
2. How are hurricanes classified?
3. What kind of damage can hurricanes cause?

**Step 3: Read the *14 Days: A Timeline* article.**

1. As you read, complete the *Tracking Hurricane Katrina* chart, which can be found at the end of this document. Not all the dates will have every box filled.
2. Be sure that you note the date from the timeline along with the other information shown in the chart.

**Step 4:** **Dig deeper through research.**

1. Conduct research to answer these questions:

1.) How do forecasters predict hurricanes?

2.) What are the advanced warning systems for hurricanes, and how do they work?

1. Be sure to use reliable Internet sources such as the following:
	1. National Oceanic and Atmospheric Administration: [www.noaa.gov](file:///C%3A/Users/marie/Downloads/www.noaa.gov)
	2. Encyclopedia Britannica: [www.britannica.com](http://www.britannica.com)
	3. www.climate.gov
	4. www.weather.gov
2. Summarize your findings in a brief essay. Your essay should include two parts:

1.) Forecasting and advance warnings about hurricanes

2) Data from Hurricane Katrina and how those data could have been used to better protect lives and property

1. As you focus on part two of your essay, use the chart you created and facts and details from the sources you explored.
2. Include a list of Internet sources with your essay.

**Step 5: Evaluate your project using this checklist.**

If you can check each box below, you are ready to submit your project.

* Is your chart complete with facts and details from the *14 Days: A Timeline* article?
* Does your essay include researched facts about forecasting hurricanes and advance warning systems?
* Does your essay include a section that explains how early warning systems may have been better used during Hurricane Katrina?
* Does your essay include a list of Internet sources you used?
* Have you edited your essay to be sure that it is organized and easy to read and has correct grammar, usage, and mechanics?

**Step 6: Revise and submit your project.**

1. If you were unable to check off all the requirements on the checklist, go back and make sure that your project is complete. Save your project before submitting it.
2. Turn in your chart and essay to your teacher through the virtual classroom.
3. Congratulations! You have completed your project.

**Tracking Hurricane Katrina Chart**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Date** | **Storm Categorization** | **Wind Speed** | **Location** | **Important Notes/Warnings** |
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