

Name: _____

Date: _____ Period: _____

Weather
Earth Science

Lab Activity: Cyclonic Weather

INTRODUCTION:

Hurricane season runs from June 1 to November 30 every year as thunderstorms form over the hot moist air of the Atlantic Ocean. Sometimes these storms come across the ocean, intensifying before they run into the islands of the Caribbean and coastal areas of the United States.

When hurricanes make landfall they bring with them severe winds and intense flooding. Often times these winds can exceed 155 mph in a Category V storm [Hurricane Katrina]. Sometimes hurricanes can cause coastal flooding with a storm surge [Hurricane Sandy].

OBJECTIVE:

Students will plot latitude and longitude coordinates on a map to see the how hurricanes typically track and the conditions that cause it to develop and die out. They will also see how the weather variables associated with a hurricane are related.

VOCABULARY:

Tropical Depression -

Tropical Storm -

Hurricane -

Saffir-Simpson Scale -

Southwesterly Winds -

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PROCEDURE A:

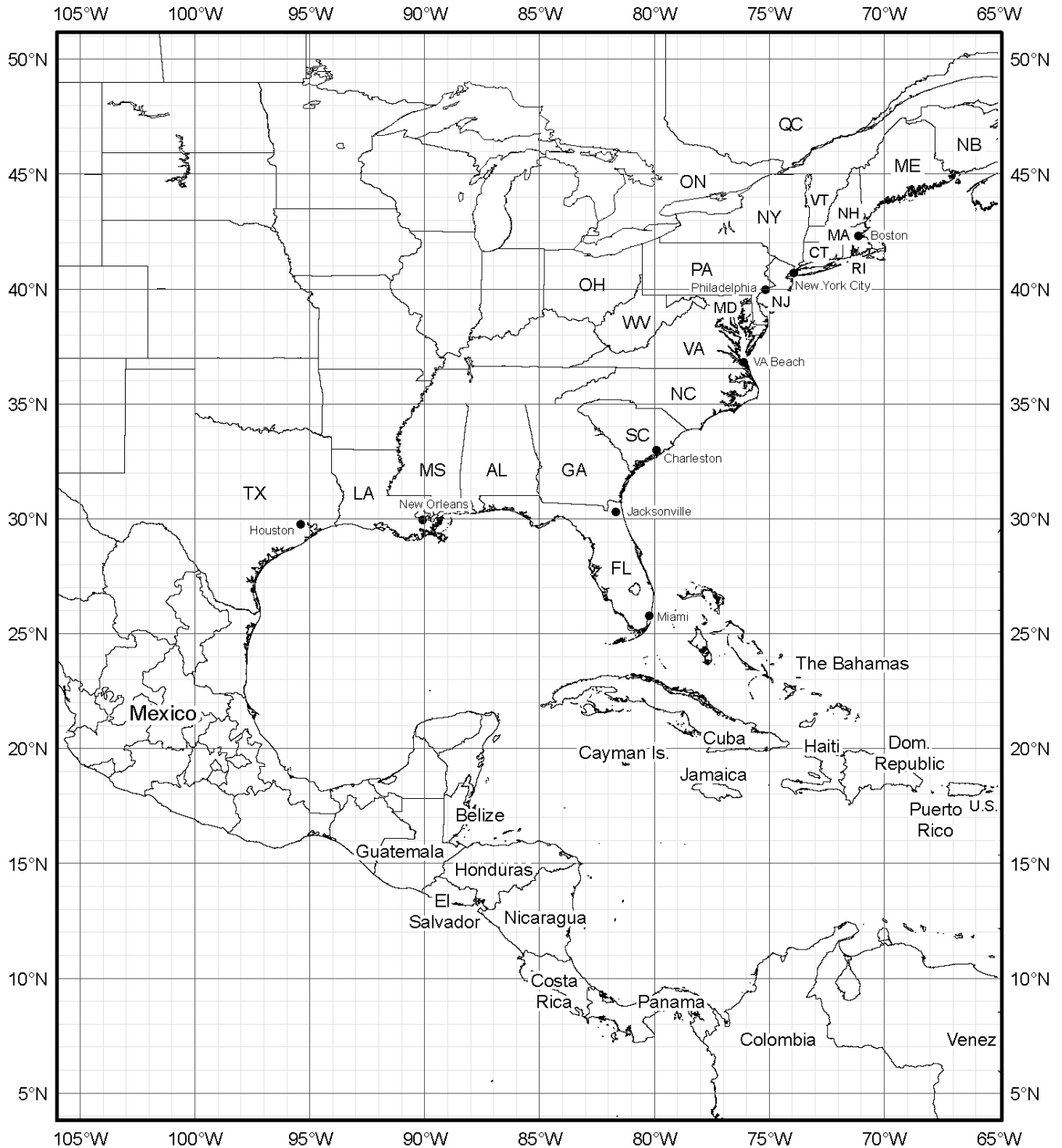
1. Using a Saffir-Simpson Hurricane Scale, fill in the Type and/or Category Storm column located in the Katrina Data Chart.
2. Using the Katrina Data Chart, plot the storm track using the latitude and longitude coordinates.

KATRINA DATA CHART

Date / Time	Latitude [° N]	Longitude [° W]	Wind Speed [mph]	Pressure [millibars]	Type and/or Category Storm
8/24 - 1200	24.5	76.5	35	1006	
8/25 - 0000	26	77.7	45	1000	
8/25 - 1200	26.2	79	55	994	
8/26 - 0000	25.9	80.3	70	983	
8/26 - 1200	25.1	82	75	979	
8/27 - 0000	24.6	83.3	90	959	
8/27 - 1200	24.4	84.7	100	942	
8/28 - 0000	24.8	85.9	100	941	
8/28 - 1200	25.7	87.7	145	909	
8/28 - 1800	26.3	88.6	150	902	
8/29 - 0000	27.2	89.2	140	905	
8/29 - 1200	29.5	89.6	125	913	
8/30 - 0000	32.6	89.1	50	961	
8/30 - 1200	35.6	88	30	985	
8/31 - 0000	38.6	85.3	30	994	

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KATRINA STORM TRACK



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PROCEDURE B:

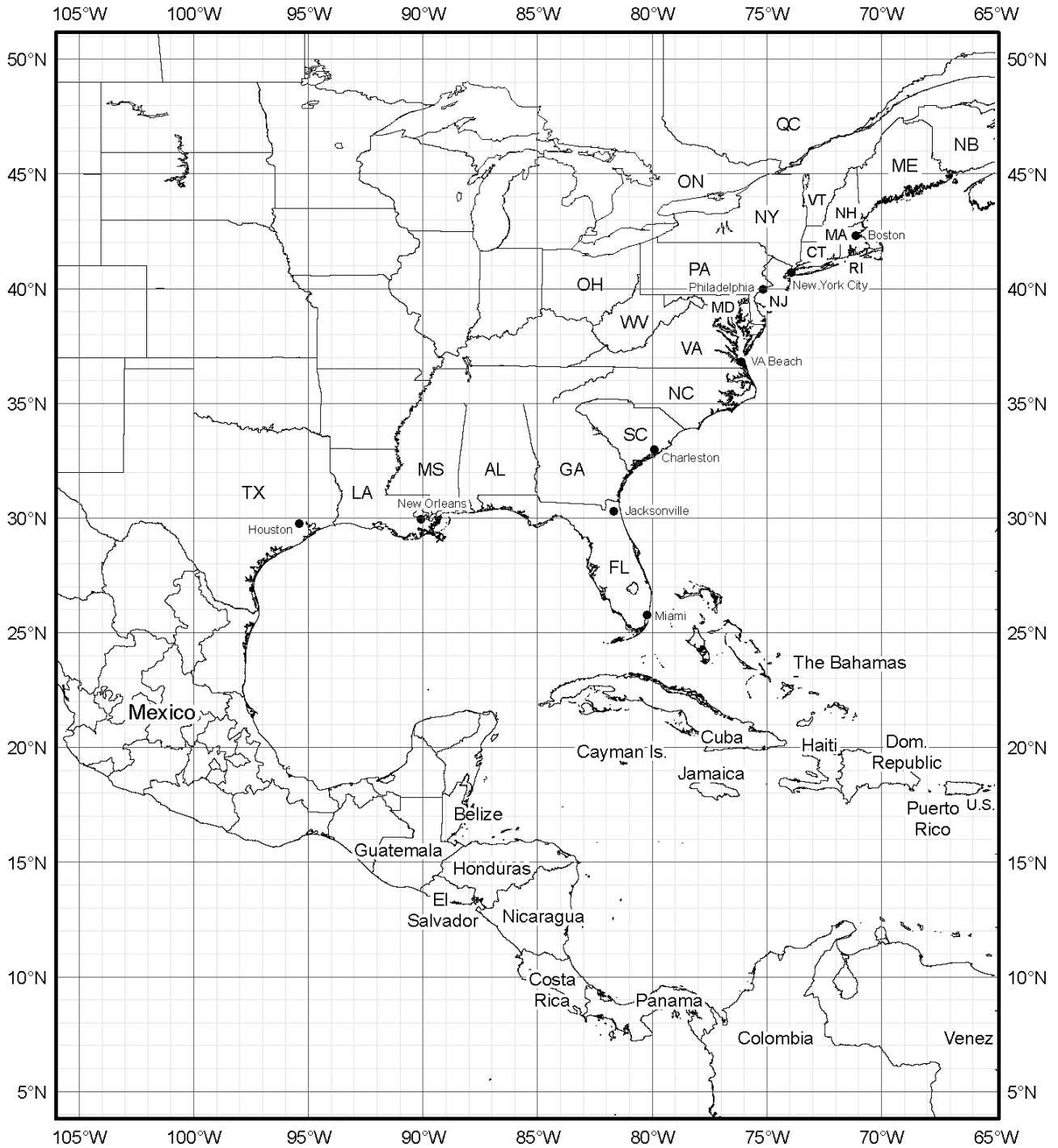
1. Using a Saffir-Simpson Hurricane Scale, fill in the Type and/or Category Storm column located in the Sandy Data Chart.
2. Using the Sandy Data Chart, plot the storm track using the latitude and longitude coordinates.

SANDY DATA CHART

Date / Time	Latitude [° N]	Longitude [° W]	Wind Speed [mph]	Pressure [millibars]	Type and/or Category Storm
10/24 - 1300	17.6	76.8	80	973	
10/25 - 0100	20.1	75.9	110	957	
10/25 - 1300	23.5	75.4	105	963	
10/26 - 0100	25.8	76.5	85	968	
10/26 - 1300	27.1	77.1	75	971	
10/27 - 0100	28.1	76.9	75	969	
10/27 - 1300	29.7	75.6	75	961	
10/28 - 0100	31.5	73.7	75	960	
10/28 - 1300	32.8	71.9	75	951	
10/29 - 0100	35.2	70.5	75	950	
10/29 - 1300	38.3	73.1	90	940	
10/29 - 1600	38.8	74.4	90	940	
10/29 - 2200	39.8	75.4	75	952	
10/30 - 0400	40.5	77.0	65	960	
10/30 - 1000	40.2	78.4	45	983	

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SANDY STORM TRACK



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DISCUSSION QUESTIONS:

1. Where in the United States are hurricanes likely to strike?
2. What is the source of a hurricane's energy?
3. What is the relationship between air pressure and wind velocity?
4. Why do hurricanes change direction at 30° North latitude?
5. Name two things that you and your family can do to prepare for a hurricane?

CONCLUSION: What information do we need to provide advanced warning of a hurricane?