

Severe Weather: Tornadoes, Hurricanes, Thunderstorms and Blizzards

WEBSITE: <http://www.nationalgeographic.com/forcesofnature/>

Once you get to this site, click on “Tornadoes”

TORNADOES

Step 1: When the number “1” is dark. Read the information about tornadoes in the gray box and answer the following questions. You may have to scroll down to see all of the information.

1. What is a tornado? **A violently rotating column of air that extends from a thunderstorm to the ground**
2. Which state has the most twisters per year? How many? **United States mainly in Texas with about 120**

Step 2: Click on the #2. Read the information in the gray box, and answer the following questions.

1. What are supercells? **Large thunderstorms that already have wind rotations**
2. Where do most tornadoes in America occur? **Tornado valley Texas to Nebraska**
3. Why do most tornadoes occur in the late afternoon? **The sun has heated the ground and atmosphere to produce thunderstorms**

Click on the “next” button to zoom in to see a tornado.

4. When do tornadoes form?
When warm air collides with cold dry air
5. What is an updraft? **When warm air rises through the colder air**
6. Why would it start to rotate? **When warm air is drawn in**
7. Before the storm turns into a tornado, what type of cloud does it become? **Funnel cloud**

Step 3: Click on the #3. Read the information in the gray box, and answer the following questions.

1. What type of weather accompanies tornadoes? **Thunderstorms and hail**

Click on “see tornado damage at the bottom of the text.”

2. How does the Fujita scale measure tornado intensity? **From a scale of 0 to 5**

Move around the Fujita scale to see the effects tornadoes of different intensities have.

Click on the #4 to see a video of a tornado passing.

Click on the #5 to answer the following question. You will have to scroll down to answer the question.

1. What is the difference between a tornado watch and a tornado warning? **Watch is your watching the weather, and warning is when you spot the clouds forming**

Click on #6 to make a tornado.

1. What conditions are perfect for making a tornado? **Cold/dry air mass turning into a warm/moist, the pressure falling and winds variable.**

HURRICANES

Now, you are moving on to “hurricanes.” Click on the hurricane symbol above the numbers, and begin.

1. How many mph must winds be going in order for a tropical storm to be a hurricane? **74**

2. Where do hurricanes form? **Atlantic or eastern pacific**

Where do cyclones form? **Bay of Bengal**

Where do typhoons form? **Western pacific**

Click on #2, and read the information. Click the “next” button when you are done.

1. Does the eye of the hurricane have HIGH or LOW pressure? **low**

2. Where are the most violent winds in the hurricane? **Eye wall**

Click on the #3.

1. In the northern hemisphere, hurricanes always turn how? **CounterClockwise**

2. In the southern hemisphere, they always turn how? **Clockwise**

Play with the image of the hurricane to see a 3-D image.

Click on the #4.

1. All of the rain from hurricanes can cause what to occur? **Floods and landslides.**

2. What is a storm surge? **The most dangerous part of the hurricane, a rise in sea level itself**

Click on the #5.

Read the information, and watch the video.

Click on the #6.

1. What is the difference between a hurricane watch and a hurricane warning? **Hurricane watch is the NHC issuing a watch and hurricane warning is when its being spotted**

Click on the #7.

Create 5 hurricanes.

1. Which one creates the most damage? What factors? **Number five, cat:4, 131 to 155 mph, damage extreme**
2. Which one creates the least damage? What factors? **Number three, cat:1, 73 to 95 mph, minimal damage to vegetation**

THUNDERSTORMS

Go to <http://www.srh.noaa.gov/jetstream/tstorms/ingredient.htm>

1. List the 3 ingredients necessary for a thunderstorm. **Moisture, instability, lifting mechanism**
2. Click on “Life cycle of a Thunderstorm”. Take notes on each of the three stages.
 - Towering Cumulus Stage- **A cumulus cloud begins to grow vertically, perhaps to a height of 20,000 feet. Air within the cloud is dominated by updraft with some turbulent eddies around the edges.**
 - Mature Cumulus Stage- **The storm has considerable depth, often reaching 40,000 to 60,000 feet. Strong updrafts and downdrafts coexist. This is the most dangerous stage when tornadoes, large hail, damaging winds, and flash flooding may occur.**

Dissipating Stage- The downdraft cuts off the updraft. The storm no longer has a supply of warm moist air to maintain itself and therefore it dissipates. Light rain and weak outflow winds may remain for a while during this stage, before leaving behind just a remnant anvil top.

3. What are some of the potential hazards of thunderstorms? **Getting struck by lightning**

Create-A-Cane Game

<http://www.nhc.noaa.gov/outreach/games/canelab.htm>

Create-A-Cane Post Game Question

1. What is the ideal wind speed for a hurricane? **low**
2. What is the ideal temperature for a hurricane? **Sea surface temperatures must 82 degrees F 26.5**
3. What is the ideal latitude for a hurricane? **Hurricanes form over tropical waters between 8 and 20 degrees latitude 5-3 north**
4. What is the ideal moisture for a hurricane? **Very moist in low and middle levels**
5. What is needed to create a tropical depression in the ocean? **Mixture between warm and cold fronts**