Tornadoes Student Activity Book

I. Introduction

Have you ever seen a tornado? Hopefully, it was in a video on television. Each year as many as 1000 tornadoes may occur in the United States. Their destruction can range from minor to devastating. Although about 100 people are killed each year by tornadoes, many more people survive unharmed. By knowing what to do you can greatly decrease your chances of getting hurt. This activity will introduce you to the history of tornado forecasting, tornado formation and tornado safety.

Get Info Objectives

- 1. Describe when and where most tornadoes form.
- 2. Explain tornado watches and warnings and how to respond.
- 3. Describe what tornadoes look like.

Gather Data Objectives

- 1. Learn about the first tornado forecast.
- 2. Learn about the Fujita scale for rating tornadoes: what each category means and which ratings are most commonly given.
- 3. Learn how to calculate percentages.

Applying Principles Objectives

- 1. Consider the impact the first tornado forecast had on saving lives.
- 2. Discuss the importance of following safety plans given the amount of damage done by most tornadoes.
- 3. Describe why it is unlikely an F6 rating will ever be assigned to a tornado.

Before doing anything else, add the NOAA Research "Tornadoes" site to Bookmarks or Favorites on your web browser.
II. Get Info
A. Occurrence
Click on the "Preparedness Guide" site.Read the information and answer the following questions.
1. Describe where most United States tornadoes occur.
2. What time of year do most tornadoes form in the United States?
 Describe the most violent tornado in terms of wind speed and size of the damage path.

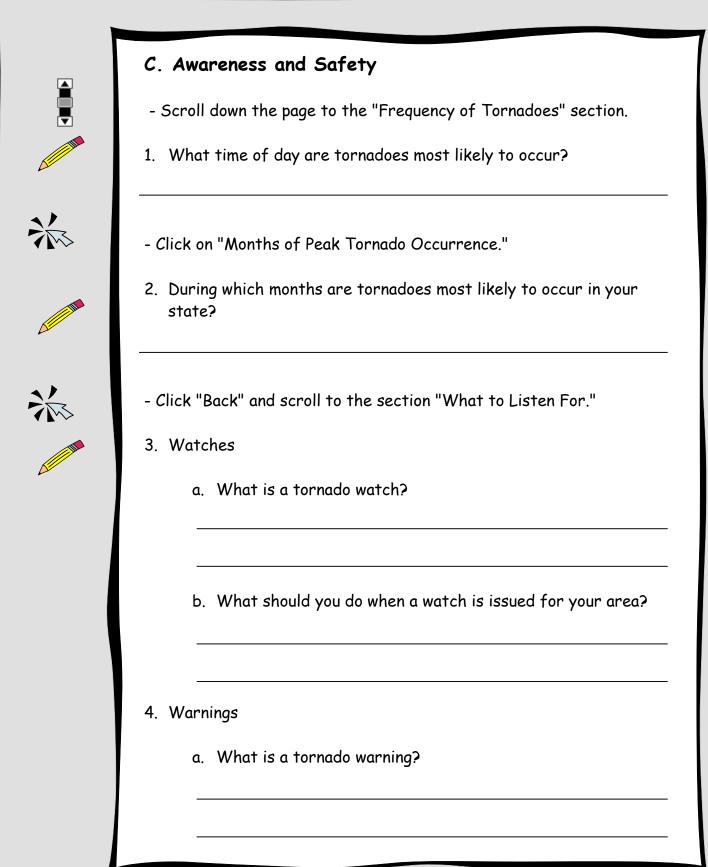




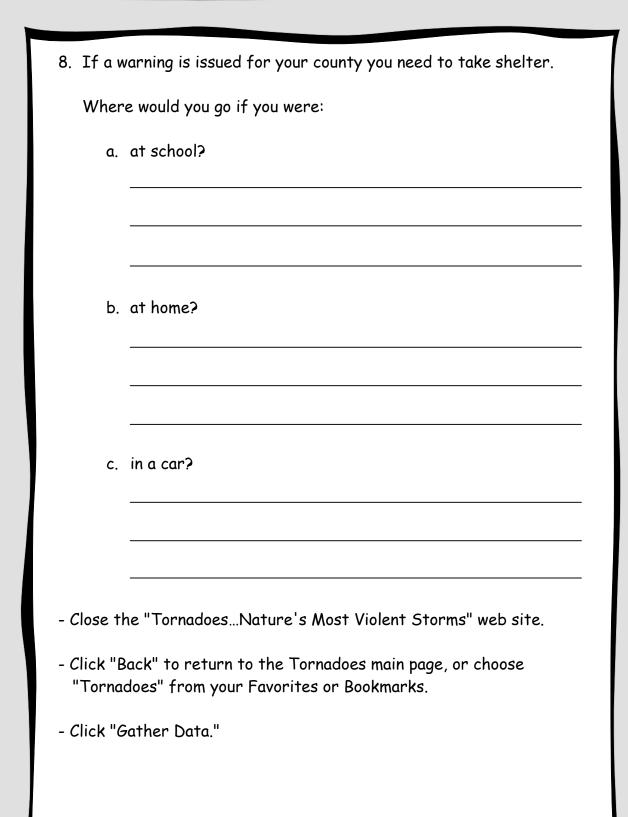
B. Variations

- Scroll down the page to the "Tornado Variations" section.
- 1. Are tornadoes always easy to see?
- 2. What happens to make them visible?

- 3. What is a tornado over water called?
- Scroll down the page to the "Tornadoes Take Many Shapes and Sizes" section.
- 4. Which tornadoes occur most often: weak, strong, or violent?
- 5. Most tornado deaths are caused by violent tornadoes. Violent tornadoes represent what percent of all tornadoes?



down to "Environmental Clues." are the signs that a tornado might form?
are the signs that a tornado might form?
down to "Tornado Safety."
do you prepare before the storm?
do you keep yourself informed when there is bad weathe





III. Gather Data

A. The First Tornado Forecast





- Click on the "Golden Anniversary" site.
- Scroll down to "Historical Events" and click on "Description of Historical Events."
- Scroll down to "March 20, 1948."
- Read the information and answer the following questions.
- 1. What happened at 10 p.m. on March 20, 1948?





- Scroll down to "March 21, 1948."
- 2. On March 21, 1948, the Investigative Board decided that tornadoes could not be forecast, given the current state-of-the-art. What did they recommend?

- Scroll down to "March 22-24, 1948."









3. What did Fawbush and Miller study over the next three days?

- Scroll down to "March 25, 1948."
- 4. What happened at 2:50 p.m. on March 25, 1948?

5. Later that night, what happened for the second time in five days?

6. The first tornado forecast led to what?





- Click "Back" twice to return to the Tornadoes "Gather Data.1" web page.
- Scroll to the bottom of the page and click "Forward."





B. Tornado Statistics

- Click on the "Fujita Scale" site.
- Look at the two pie charts and read the descriptions.
- 1. What years of data are these statistics made from?

- 2. What percentage of all tornadoes are considered:
 - a. Weak? _____
 - b. Strong?____
 - c. Violent?
- 3. Did the number of people killed by tornadoes increase or decrease after 1950?







4.	What	kinds o	f damage	are :	typical	of	these	tornadoes?
----	------	---------	----------	-------	---------	----	-------	------------

α.	weak (ro and ri)	
	,	

b.	Strong (F2 and F3)	
	J \	

c.	Violent (F4 and F5)	





- Click "Back" to get to the Tornadoes "Gather Data.2" web page.
- Scroll to the bottom of the page and click "Forward."

${\it C.}$ Decoding the Dallas County Texas Tornado Statistics Summary



- Click on "All Tornado Statistics" site.
- Click on "every state in the USA."
- 1. What years of data were used for the first step?



- Scroll down to the map of the United States.

- Click on Texas.
- Click on the letter "D" and then scroll down to Dallas County.
- 2. Of the 66 tornadoes, tally with hatch marks how many were:



F1: _____

E2.

F4: ----

F5: ----



3.	Add your	totals	to show	how	many	tornadoes	were	in the	following
	categories:								

Weak (F0 + F1):

Strong (F2 + F3):

Violent (F4 + F5): _____

4. Now calculate what percentage each category represents of the total number of tornadoes (hint: divide the number in the category by the total, 66, and multiply by 100):

Weak:

Strong:

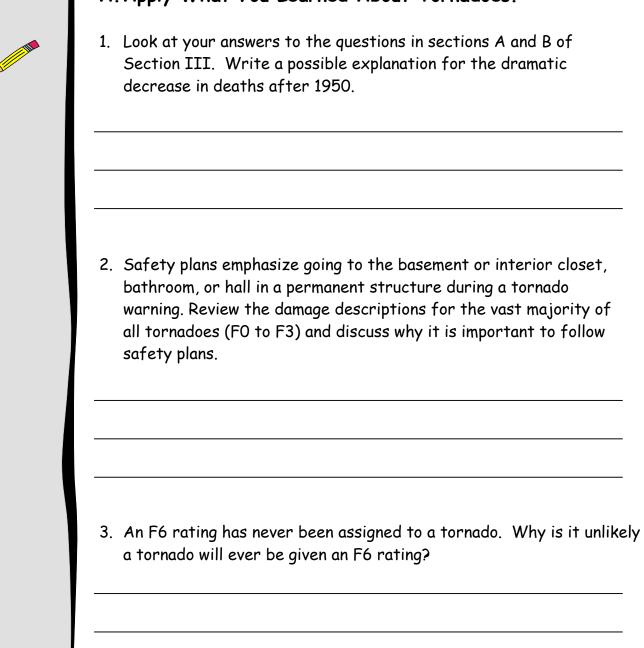
Violent:

- Close the "Texas Tornadoes Page 3" web site.
- Click "Back" to return to the Tornadoes "Gather Data.3" page.
- Click "Return" at the bottom of the page to go to the Tornadoes main page or choose "Tornadoes" from your Favorites or Bookmarks.
- Click "Application."



IV. Application

A. Apply What You Learned About Tornadoes.





Page 13



- Click "Return" to go to the Tornadoes main page.
- Click "Enrichment"

V. Enrichment Activities

A. You are the Mayor

- 1. How will your town's emergency management staff prepare if your town is in a tornado watch? What if your town is actually hit by a tornado? List potential duties for each group of emergency personnel:
 - a. Civil defense coordinator
 - b. Storm spotters
 - c. Ambulance drivers
 - d. Fire fighters
 - e. Police
 - f. Sanitation workers

B. You are the Local Civil Defense Coordinator

- 1. Develop a public awareness plan to inform people what to do during tornado watches and warnings, and after a tornado hits. Include television, newspaper, and radio messages.
- 2. Develop a plan to make mobile home parks safer. Where should people in mobile homes go when they hear a warning?

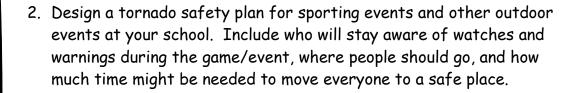
C. You are the Principal of a School

1. Design a tornado safety plan for the school. Include the months that are most likely to produce tornadoes. Describe what the students should do when there is a tornado warning.



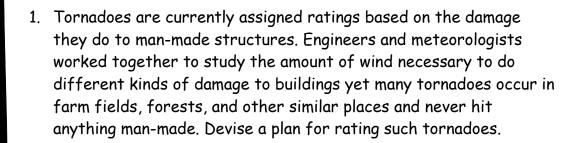






- Click "Forward" to go to the Tornadoes "Enrichment.2" page.

D. You are the Meteorologist

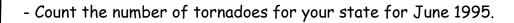


E. Local Tornado Data

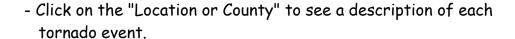




- Select your state and click on "Continue."
- Change "Begin Date" to "06/01/1995"
- Change "End Date" to "06/30/1995"
- Click on the "List Storms" button on the right side of the screen.



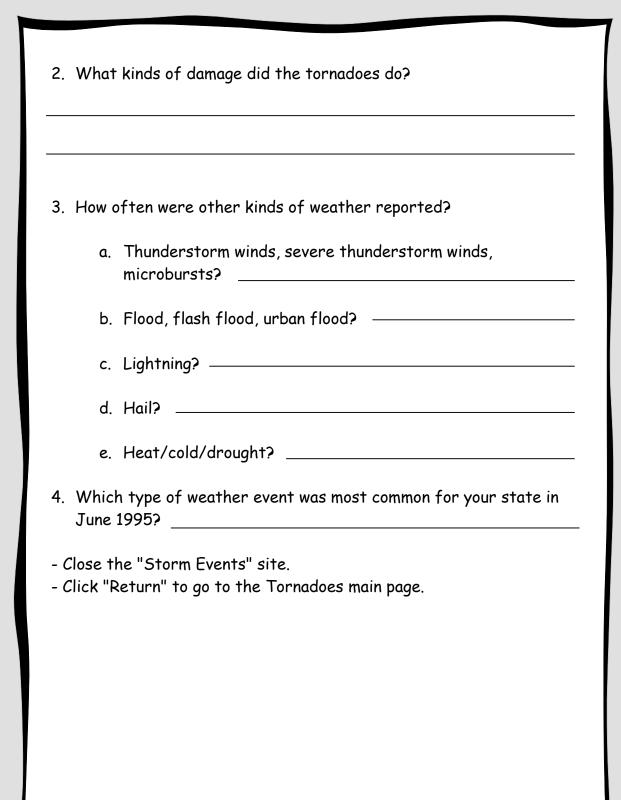














F. Related Web Sites

- SPC Severe Storm Statistics http://www.spc.noaa.gov/archive/tornadoes/
- 2. National Severe Storms Laboratory http://www.nssl.noaa.gov/
- 3. Storm Data and Unusual Weather Phenomena http://www.ncdc.noaa.gov/oa/climate/sd/pre0208.pdf
- 4. Monthly Totals http://www.spc.noaa.gov/archive/tornadoes/ustbmy.html
- 5. TORNADO! The Oakfield, Wisconsin Case Study http://cimss.ssec.wisc.edu/oakfield/cs1.htm
- 6. VORTEX Unraveling the Secrets http://www.nssl.noaa.gov/noaastory/
- 7. The Tornado Project Online http://www.tornadoproject.com
- 8. Severe Thunderstorm Climatology http://www.nssl.noaa.gov/hazard/