

Hurricanes

Show video:

http://www.sciencedaily.com/videos/2007/0901-3d_hurricane_tracking.htm

http://www.sciencedaily.com/videos/2006/0503-hurricanes_inside_the_storm.htm

Discuss hurricanes, asking about first-hand knowledge as well as what participants know about hurricanes in the U S through news reports.

- Ask participants to share their experiences with hurricanes.
- Introduce concepts of wind speed and air pressure.
[http://www2010.atmos.uiuc.edu/\(Gh\)/guides/mtr/hurr/stages/cane/pswd.rxml](http://www2010.atmos.uiuc.edu/(Gh)/guides/mtr/hurr/stages/cane/pswd.rxml)
- Examine *USA Today* graphic of wind speed and air pressure (contained in the downloads) and discuss.
http://education.ti.com/educationportal/activityexchange/activity_detail.do?activityid=3644&cid=us

Ask participants to enter the data from the *USA Today* graphic into Excel or graphing calculators and build a model.

1. Find a best-fitting quadratic regression.
2. Read the graphic with the data more carefully and find out the formula used by Ahren.
3. Examine how student results compare with Ahren's formula. Why would Ahren just leave off the last two terms of the model ?
4. Extension: do research on Ahren's formula.

Ask participants questions from page 4 of *USA Today* lesson plan:

5. What would be the force of the wind in psf if the wind speed were 100 mph? 200 mph?
6. If wind pressure were at 50 psf, what would the wind speed be? 75 psf?
7. Compare the forces of the wind at 100 and 200 miles per hour. The wind speed has doubled. How much has the force increased? Why?

Look at hurricane damage amounts related to wind speed

<http://www.aoml.noaa.gov/hrd/tcfaq/D5.html>

(Links in the document, other than the video, are also available as PDF files on the Right Stuff web page.)