

Weather Forecasting Webquest

Name _____

Begin by going to the following website:
<http://www.oar.noaa.gov/k12/html/forecasting2.html>
Click on the Get info.1 link

Weather Symbols

Click on the symbols site.... Read the chart and fill in the symbols.

	Light	Moderate	Heavy
Rainfall			
Snow			
Thunderstorm		X	
Lightning		X	X

Start using this web site here →

*ww2010.atmos.uiuc.edu/
(Gh)/guides/maps/sfcobs/wx.
rxml*

**for this chart only*

Click "Back" to return to the Forecasting "Get Info.1" web page.

Cloud Cover Symbols

Click on the "Project Cloud Cover" site.

1. Describe how you would show that the sky was 50% cloudy.
2. Draw a sky that has about 10% cloud coverage



Click back and then.....

Storm Structure

Click on the "Project Wind Speed Symbols" site

1. How do you show the direction the wind is blowing from?
2. What is the relationship between the length of the lines on the barb and the wind speed?

3. Draw a picture that would represent southerly wind blowing about 15 knots with clear skies.
4. Draw a model that would show a northwesterly wind blowing at 20 knots with 25% cloud cover.
5. Convert 20 knots to miles per hour (show how you got your answer).
6. Draw a station model (wind barb) showing 86 miles per hour southwesterly wind and completely overcast skies (first convert to knots from mph)

Click back to return to "Get Info.1" then forward at bottom of page

Isobars

Click on the Project Isobars site.

1. What are isobars?
2. Describe how the wind would move at a:

Cyclone –

Anti-cyclone –
3. Using what you just read about, how can we use isobars to show the direction that the wind is blowing?

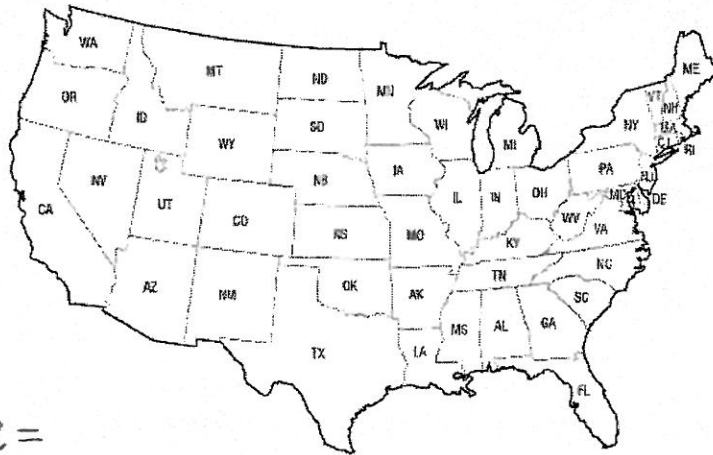
Click "back".... Then "Forecasting".... then "gather data"
back again...
Current Atmospheric Pressure at Sea Level

Click on Weather Graphics... scroll to "sea level pressure – isobars"

1. What is the pressure here in ^{Iowa} Minnesota (approx) _____ mb
2. Which state(s) has the highest pressure on this map?
3. Which state(s) has the lowest pressure on this map?

Close the isobars map and click on *Sea Level Pressure with Wind Vectors* map

4. Which states should have the highest winds?
5. What direction are the strongest winds blowing from?
6. Describe the wind speed and direction from around ^{Battendorf} Little Falls.
7. What is the interval (pressure difference) between two isobars? _____
8. On the map, draw clouds where you think they would be found based on the pressures.



High Pressure =
sinking air
(no clouds)

Low Pressure =
rising air
(clouds present)

Check your work, click on "Sea Level Pressure with IR Satellite & Wind Vectors" map.

Close the "Sea Level Pressure with IR Satellite & Wind Vectors" map to return to the "Weather Graphics" site.

Current Temperature at Sea Level

Click on "Surface Temperature – Temperature Contours" map

1. Where is the coldest temperature on the map?
2. Where is the hottest temperature on the map?

Close the surface temperature map

Wind Maps

- Click on "Surface Observations – United States" map.
- To read this map, remember how wind barbs are drawn to show the direction of the wind.

1. Where is the wind blowing the strongest?
2. Where is an area of calm air surrounded by wind?

- Close the "Surface Observations – United States" map.
- Click "Back" to return to the Forecasting "Gather Data.2" page.
- Scroll to the bottom of the page and click "Forward" to go to the "Gather Data.3" page.

Rainfall

- Click on the "Daily Weather Map – Rainfall" site.
- Click on the maps image.
- Scroll to the bottom of the page and click on the "24-hr Precipitation" map.

1. How many inches of rain have fallen in your area during the past 24 hours? _____ in?
2. What is the relationship between the areas where it is raining and the pressure in those areas?

- Click "Back" until you return to the Forecasting "Gather Data.3" page

Satellite Cloud Picture

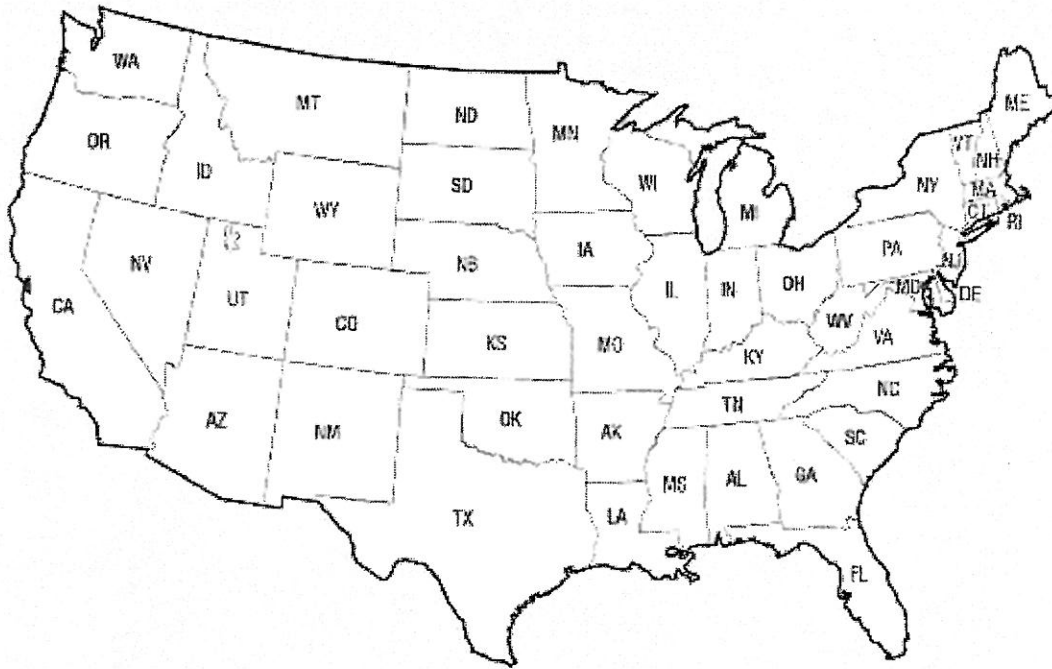
- Click on the "Satellite Images" site.
- Click on "Visible" in the "East CONUS" column to view the Eastern part of the U.S.
(The "CONUS" stands for the continental U.S.)
- Click on "Visible" in the "West CONUS" column to view the Western part of the U.S.

1. Did you draw the clouds where they actually are when you answered Question 8 in "Gather Data, Section A"?

- Click "Back" to return to the Forecasting main page
- Click "Application".

Forecasting

1. Using the information from the maps you have, forecast where the clouds will be in three days. Draw them in their new positions on the map of the United States.



Three days from the time you complete this activity watch the news. Look to see where the clouds actually are to check your answer. You can also go back to the "Satellite Images" site in Gather Data.3 section E and follow the directions to get the day's satellite.

Wind Direction and Air Masses

1. If you were standing on the edge of a thunderstorm as it begins to form, would the wind be blowing into the storm or out of it, and why?

(Review section E in the Get Info section if you need help.)

- Click "Forward" at the bottom of the screen.

How Maps Show Relationships among Weather Phenomena

1. How can you estimate the wind speed and direction using the pressure map?

Close the "Sea Level Pressure with Wind Vectors" map and then compare the sea level pressure to temperature.

2. How are pressure and temperature related?

Close the "Sea Level Pressure with Wind Vectors" map and then compare the sea level pressure to clouds.

3. How are pressure and clouds related?

- Close the "Sea Level Pressure with IR Satellite" map.

- Click "Forward" at the bottom of the screen.