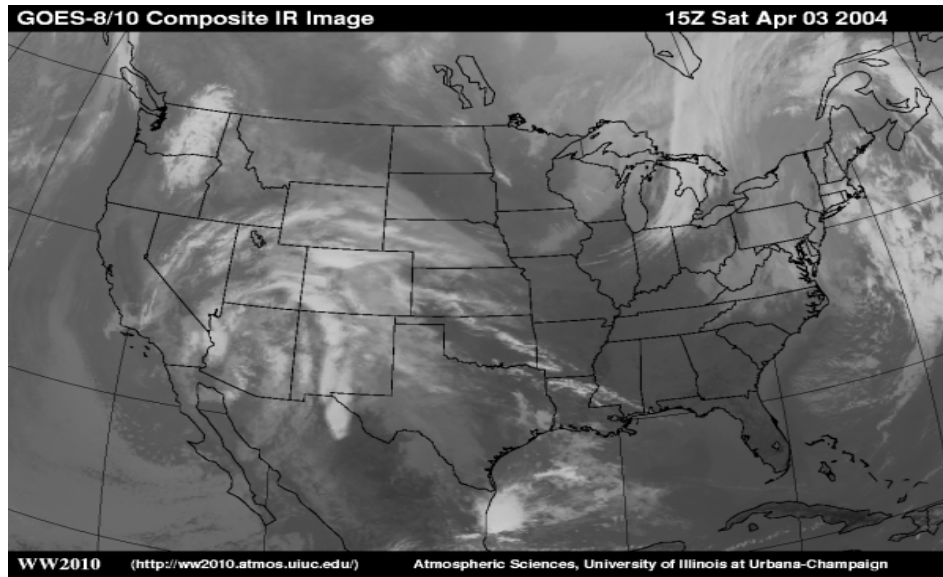


# Forecasting the Weather Web Quest



Based on the Internet Web site WW2010 by The University of Illinois  
[http://ww2010.atmos.uiuc.edu/\(Gh\)/home.rxml](http://ww2010.atmos.uiuc.edu/(Gh)/home.rxml)

**Introduction:** How do meteorologists forecast the weather? In this web quest we will explore air masses, fronts, weather stations and weather forecasts.

**Procedure:** Follow the links for each question and write down your responses on the [Forecasting the Weather Worksheet](#).

1. What is an air mass?

[http://ww2010.atmos.uiuc.edu/\(Gh\)/guides/mtr/af/arms/home.rxml](http://ww2010.atmos.uiuc.edu/(Gh)/guides/mtr/af/arms/home.rxml)

2. Describe the temperature, moisture and air pressure associated with a Continental Polar air mass.

[http://ww2010.atmos.uiuc.edu/\(Gh\)/guides/mtr/af/arms/artc.rxml](http://ww2010.atmos.uiuc.edu/(Gh)/guides/mtr/af/arms/artc.rxml)

3. Describe the temperature, moisture and air pressure associated with a Maritime Tropical air mass.

[http://ww2010.atmos.uiuc.edu/\(Gh\)/guides/mtr/af/arms/trp.rxml](http://ww2010.atmos.uiuc.edu/(Gh)/guides/mtr/af/arms/trp.rxml)

This Web Quest was written by Linda Ruiz McCall for the Earth2Class Project  
(<http://www.Earth2Class.org>)

4. Describe a high pressure center. What is another name for a center of high pressure?

[http://ww2010.atmos.uiuc.edu/\(Gh\)/wwhlpr/anticyclone.rxml?hret=/guides/mtr/af/arms/artc.rxml](http://ww2010.atmos.uiuc.edu/(Gh)/wwhlpr/anticyclone.rxml?hret=/guides/mtr/af/arms/artc.rxml)

5. What is a cyclone? What direction do winds flow in cyclones in the Northern Hemisphere? In the Southern Hemisphere?

[http://ww2010.atmos.uiuc.edu/\(Gh\)/wwhlpr/cyclone.rxml?hret=/guides/mtr/af/arms/artc.rxml](http://ww2010.atmos.uiuc.edu/(Gh)/wwhlpr/cyclone.rxml?hret=/guides/mtr/af/arms/artc.rxml)

6. Watch this animation on how winds flow around cyclones (pressure lows) and anticyclones (pressure highs) in the Northern Hemisphere. Draw and describe what you observe below.

[http://ww2010.atmos.uiuc.edu/\(Gh\)/wwhlpr/anticyclone\\_ani.rxml?hret=/guides/maps/sfc/temp/sfctmpslp.rxml](http://ww2010.atmos.uiuc.edu/(Gh)/wwhlpr/anticyclone_ani.rxml?hret=/guides/maps/sfc/temp/sfctmpslp.rxml)

7. What is the definition of a front?

[http://ww2010.atmos.uiuc.edu/\(Gh\)/guides/mtr/af/frnts/home.rxml](http://ww2010.atmos.uiuc.edu/(Gh)/guides/mtr/af/frnts/home.rxml)

8. Individual surface weather stations use a standard format to report data. Review the weather stations symbols for temperature, weather symbol, dew point, cloud cover, sea level pressure and wind. Draw and label the station symbol in this example.

[http://ww2010.atmos.uiuc.edu/\(Gh\)/wwhlpr/sfcobs.rxml?hret=/guides/mtr/af/arms/trp.rxml](http://ww2010.atmos.uiuc.edu/(Gh)/wwhlpr/sfcobs.rxml?hret=/guides/mtr/af/arms/trp.rxml)

9. What is a cold front? Describe the characteristics before, during and after a cold front below.

[http://ww2010.atmos.uiuc.edu/\(Gh\)/guides/mtr/af/frnts/cfrnt/def.rxml](http://ww2010.atmos.uiuc.edu/(Gh)/guides/mtr/af/frnts/cfrnt/def.rxml)

10. Watch the animation of a cold front and describe the type of precipitation associated with cold front movement.

[http://ww2010.atmos.uiuc.edu/\(Gh\)/guides/mtr/af/frnts/cfrnt/prcp.rxml](http://ww2010.atmos.uiuc.edu/(Gh)/guides/mtr/af/frnts/cfrnt/prcp.rxml)

11. What is a warm front? Describe the characteristics before, during and after a cold front below.

[http://ww2010.atmos.uiuc.edu/\(Gh\)/guides/mtr/af/frnts/wfrnt/def.rxml](http://ww2010.atmos.uiuc.edu/(Gh)/guides/mtr/af/frnts/wfrnt/def.rxml)

12. Watch the animation of a warm front and describe the type of precipitation associated with a warm front.

[http://ww2010.atmos.uiuc.edu/\(Gh\)/guides/mtr/af/frnts/wfrnt/prcp.rxml](http://ww2010.atmos.uiuc.edu/(Gh)/guides/mtr/af/frnts/wfrnt/prcp.rxml)

13. What factors lead to an increased probability (chance) of precipitation?

[http://ww2010.atmos.uiuc.edu/\(Gh\)/guides/mtr/fcst/prcp/frnt.rxml](http://ww2010.atmos.uiuc.edu/(Gh)/guides/mtr/fcst/prcp/frnt.rxml)

14. The importance of temperature in the formation of rain, freezing rain, sleet or snow.

[http://ww2010.atmos.uiuc.edu/\(Gh\)/guides/mtr/cld/prcp/zr/fcst/fcst.rxml](http://ww2010.atmos.uiuc.edu/(Gh)/guides/mtr/cld/prcp/zr/fcst/fcst.rxml)

15. What is a Supercell Storm? What dangerous conditions may develop during supercell storms? What wind and cloud conditions are prevalent in supercell storms?

[http://ww2010.atmos.uiuc.edu/\(Gh\)/wwhlpr/supercell.rxml?hret=/guides/mtr/af/frnts/ofdef.rxml&prv=1](http://ww2010.atmos.uiuc.edu/(Gh)/wwhlpr/supercell.rxml?hret=/guides/mtr/af/frnts/ofdef.rxml&prv=1)

16. What is the “Jet Stream” and at what altitude is the jet stream measured?

[http://ww2010.atmos.uiuc.edu/\(Gh\)/guides/maps/upa/3wndhgt.rxml](http://ww2010.atmos.uiuc.edu/(Gh)/guides/maps/upa/3wndhgt.rxml)

17. a. Describe the “trends” method of forecasting. What factors does a meteorologist using the trends method consider?

b. If a line of thunderstorms is located 60 miles to your northwest and moving southeast at 30 miles per hour, how long will it take to reach your location? Show your calculation.

[http://ww2010.atmos.uiuc.edu/\(Gh\)/guides/mtr/fcst/mth/trnd.rxml](http://ww2010.atmos.uiuc.edu/(Gh)/guides/mtr/fcst/mth/trnd.rxml)

18. List two things you learned and one think you would like to learn about forecasting weather.