

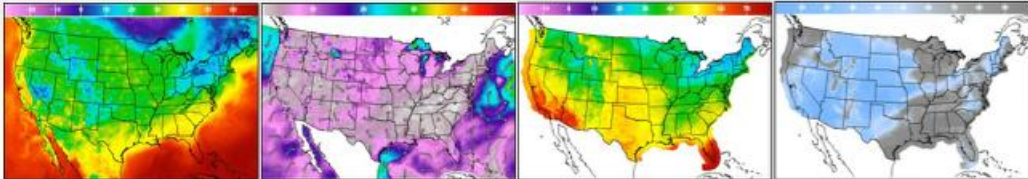
Module 11: Meteorology

Topic 5 Content: Weather Maps Notes

Introduction

Weather Maps

Introduction



A variety of weather maps are produced by the National Weather Service and National Oceanographic Atmospheric Administration. These maps are used to help meteorologists accurately predict the weather. In this activity, click each of the steps to view a sampling of some of the important maps a meteorologist may analyze on a daily basis.

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Topic 5 Content: Weather Maps Notes

Forecast

Weather Maps

Forecast

A forecast map is produced by the National Oceanographic Atmospheric Administration, or NOAA. This map shows pressure patterns, circulation centers, fronts, as well as the types and the extent of precipitation. Notice the yellow lines on this map. These lines are called isobars. They indicate areas of equal pressure. Isobars are much like contour lines on a topographic map. Air moves from high pressure into low pressure, so these lines can indicate the direction of moving air and storms. Some maps may contain isotherms. Just like isobars, an isotherm is a line indicating areas of equal temperature.



1 2 3 4 5 6 7 8 9 10

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Topic 5 Content: Weather Maps Notes

Surface Conditions

Weather Maps

Surface Conditions

The current surface conditions maps are produced by the National Oceanographic Atmospheric Administration, or NOAA. This map may look confusing and busy; however, NOAA produces a large version that shows the station models for each location in the continental United States. This map also contains pressure, fronts, and isobars.



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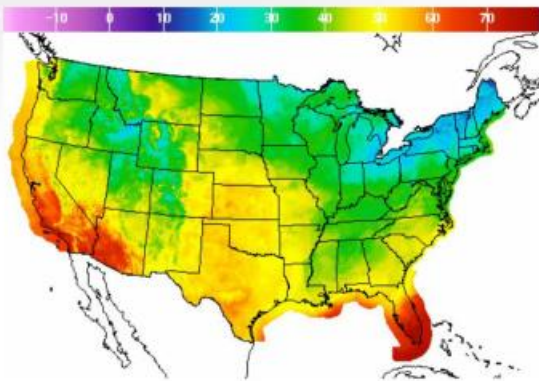
Topic 5 Content: Weather Maps Notes

Temperatures

Weather Maps

Temperatures

Knowing the temperature helps you decide your daily clothing and activities. Every twelve hours, the temperature map is updated so meteorologists can predict temperature trends for the day. On this map, red indicates a warm temperature and purple indicates a cold temperature.



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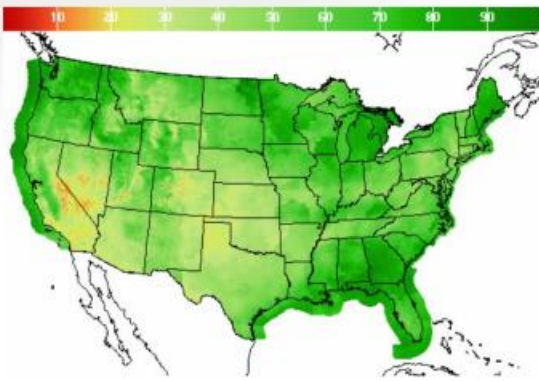
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Relative Humidity

Weather Maps

Relative Humidity

Relative humidity is the amount of moisture present when compared to the amount present at saturation. On this map, dark green indicates saturation and red indicates the lowest relative humidity.



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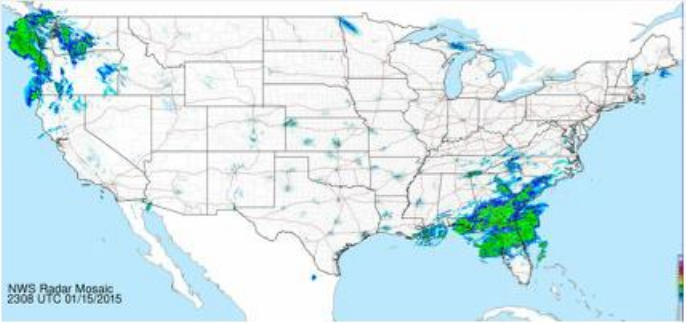
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Topic 5 Content: Weather Maps Notes

Doppler Radar

Weather Maps

Doppler Radar



Doppler radar uses radio waves to indicate areas of precipitation. The image shows a Doppler radar for the continental United States. Local Doppler radar stations exist to give meteorologists a more detailed view of local conditions. This map shows major areas of precipitation over the Northwest and Southeast United States.

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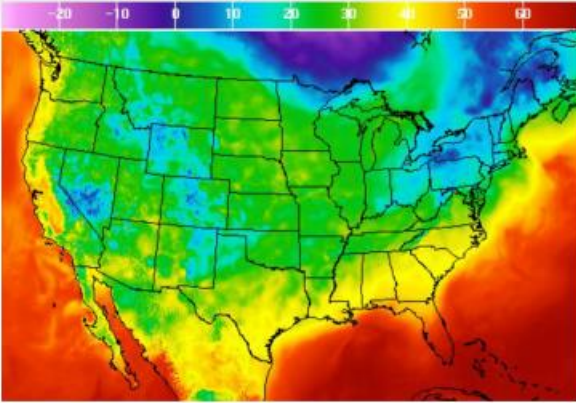
Topic 5 Content: Weather Maps Notes

Dew Point

Weather Maps

Dew Point

Dew point is the temperature at which air must be cooled to begin condensing back into liquid. This temperature tells meteorologists the temperature at which clouds form. On this map, red indicates the highest dew point temperature and purple shows the lowest.



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Topic 5 Content: Weather Maps Notes

Precipitation

Weather Maps

Precipitation

A precipitation map is produced every six hours to show the current precipitation and the precipitation totals. Meteorologists can use this map to determine how much rain will enter an area and how much fell in a certain area. On this map, purple indicates the highest amounts of precipitation, while light green shows the lowest amounts.



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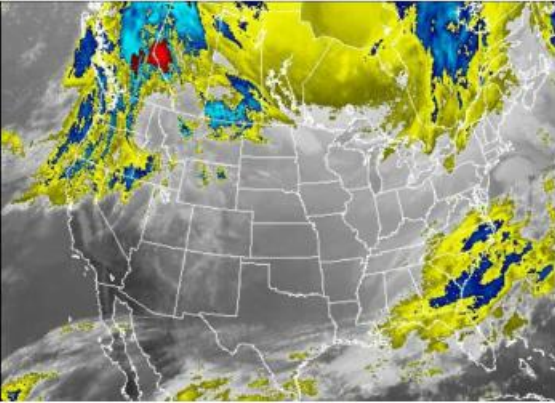
Topic 5 Content: Weather Maps Notes

Satellite

Weather Maps

Satellite

Many weather satellites exist in order to help meteorologists get a more detailed view of the cloud cover. This satellite image shows the cloud cover in the continental United States. The lighter colored clouds are thicker. The red clouds indicate very heavy cloud cover. Meteorologists can correlate cloud cover with precipitation.



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Topic 5 Content: Weather Maps Notes

Sky Cover

Weather Maps

Sky Cover



Using satellite imagery, a sky cover map is produced. On this map, darker colors indicate heavier cloud cover.

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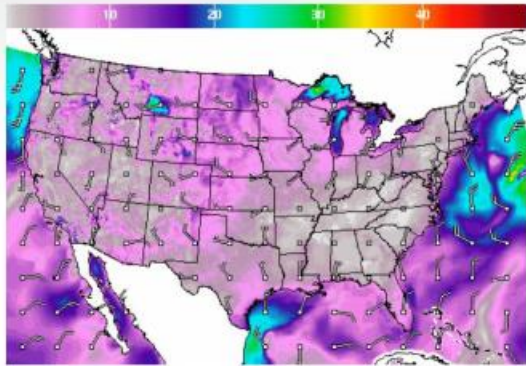
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Wind Size and Direction

Weather Maps

Wind Size and Direction

Wind speed and direction is mapped using a partial station model. You can see from this map that wind speed was greatest in the middle of the country. On this map, red indicates the highest wind speed and grey shows the lowest. The station model points the direction from which the wind originates.



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