

Science 10 – Weather Dynamics

Weather Forecasting – Meteorological Data, Weather Maps

Webquest – Part 1 Weather Map Symbols

Save a copy of the Weather Maps WebQuest Worksheet to your computer. Ctrl + click on the web site URL to take you to the sites provided or copy and paste the URL into the browser.

Use the following web sites and record the answers onto your copy of the worksheet questions shown below or looseleaf. If these sites do not provide the answers, do an Internet search for 'weather map symbols'.

<http://www.state.nj.us/dep/seeds/wssym.htm>

http://www.ace.mmu.ac.uk/eae/Weather/Older/Weather_Symbols.html

<http://dstreme.comet.ucar.edu/extras/wxsym2.html>

A. Weather Symbols Search

Find the weather map symbols that represent the following and provide an explanation of the symbol and its parts.

1. Wind speed and wind direction
2. Obscured sky cover
3. Freezing drizzle
4. Cold front
5. Blowing or drifting snow
6. Dense cirrus clouds
7. High pressure
8. Fog in patches
9. Cumulonimbus clouds
10. Moderate drizzle
11. Heavy snow
12. Tornado
13. Mild thunderstorm with hail
14. Stationary front
15. Completely overcast

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Weather Forecasting – Meteorological Data, Weather Maps Key

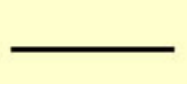
A. Weather Symbols Search Key

Find the weather map symbols that represent the following and provide an explanation of the symbol and its parts.

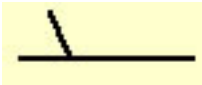
a. Wind speed and wind direction



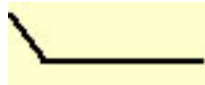
Calm Wind



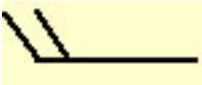
Wind less than 5 knots



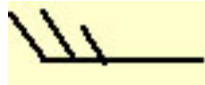
Wind 5 knots



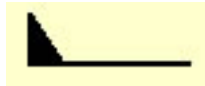
Wind 10 knots



Wind 20 knots



Wind 25 knots



Wind 50 knots

b. Obscured sky cover



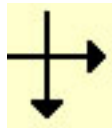
c. Freezing drizzle



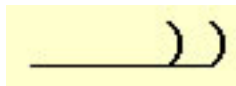
d. Cold front



e. Blowing or drifting snow



f. Dense cirrus clouds



g. High pressure



h. Fog in patches



i. Cumulonimbus clouds



j. Moderate drizzle



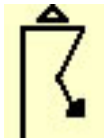
k. Heavy snow



l. Tornado



m. Mild thunderstorm with hail



n. Stationary front



o. Completely overcast



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Part 2 Weather Map Exploration Webquest

B. Weather Information

Use the following web site to answer the questions shown below.

<http://www.theweathernetwork.com/>

1. In the 'City Search' space at the top right, type in your town or city and press Enter. Record the Current Conditions including the Updated Date and Time information.
2. Scroll down the page and check out the 14 Day Forecast. What is the weather supposed to be like in 12 days?
3. Look for 'Hourly Forecast'. What is the temperature supposed to be like at 12:00 noon and at 6:00 p.m. today?
4. Ensure that town or city has been entered into 'City Search' space and click Go. In the side navigation choose 'Sun and Normals'. What is the record high and the record low temperature for today and in what year was it recorded?
5. Use the 'Sun, Moon, Seasons' option and find the sunrise and sunset time for today and the date of the next full moon.
6. Use the 'Sun, Moon, Seasons' option and find the *longitude* and *latitude* of your town or city.
7. Use the 'Weather Maps' option to find what colour on the map represents 20 degrees Celsius.
8. Use the 'Weather Maps' option to find what colour on the map represents 80 to 100% chance of precipitation.
9. Use the 'Weather Maps' option to find what type of a system you are currently in, High or Low Pressure?
10. Use the 'Weather Maps' option to find what your current wind speed is and the colour that represents this speed.
11. Find the 'UV Report' option and find the current UV index and record the interpretation of this UV index rating.
12. Use the 'Statistics' option to find the yearly average statistics for your town or city. Include the maximum and minimum temperature, precipitation, relative humidity, wind speed and wind direction for this month.

Use the following web site to answer the questions shown below.

http://weatheroffice.ec.gc.ca/city/pages/sk-40_metric_e.html

13. What does Environment Canada say that your current temperatures are? Are they same as the statistics on the Weather Network?
14. Check the 'Weather Warnings' option. What colours represent a weather warning and a weather watch?
15. Check http://www.msc-smc.ec.gc.ca/contents_e.html to find out what the Meteorological Service of Canada does?
16. Return to http://weatheroffice.ec.gc.ca/city/pages/sk-40_metric_e.html and check the 'Weather Map' option. Under the heading of Jet Stream, click on Canadian Weather at a Glance. Use this map to answer the following questions.
 - a. Locate your town or city on the map. What colour is across where your town or city is located and what does this colour mean?
 - b. What type of weather is showing on the map for your location (e.g. clear, cloudy, snow, rain, etc.)?
 - c. Is your area currently experiencing a high pressure system or a low pressure system?
 - d. What unit is the pressure recorded in?
 - e. Locate Greenland. What colour is across Greenland and what temperature does it represent?

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Part 2 Weather Map Exploration Webquest Key

B. Weather Information

Use the following web site to answer the questions shown below.

<http://www.theweathernetwork.com/>

1. In the 'City Search' space at the top right, type in your town or city and press Enter. Record the Current Conditions including the Updated Date and Time information.
Answers will vary depending on location and date, but should include all or some the information shown:
4° C, Cloudy
Wind - S 13 Km/h
Gusts -
Relative Humidity - 75%
Dew point - 0° C
Pressure - 99.70 kPa
Visibility - 24 km
Ceiling - 25000 ft
Updated: Tuesday, March 20, 2007, 13:00 CST - Saskatoon Airport
2. Scroll down the page and check out the 14 Day Forecast. What is the weather supposed to be in 12 days?
Answers will vary depending on location and date, but should include all or some the information shown:
8° C Partly Cloudy
3. Look for 'Hourly Forecast'. What is the temperature supposed to be at 12:00 noon and at 6:00 p.m. today?
Answers will vary depending on location and date, but should include all or some the information shown:
12:00 - 2° C, Partly Cloudy and 6:00 - 0° C Sunny
4. Ensure that town or city has been entered into 'City Search' space and click Go. In the side navigation choose 'Sun and Normals'. What is the record high and the record low temperature for today and in what year was it recorded?
Answers will vary depending on location and date, but should include all or some the information shown:
Record High - 14.4° C (1945)
Record Low - 32.2° C (1955)

5. Use the 'Sun, Moon, Seasons' option and find the sunrise and sunset time for today and the date of the next full moon.
Answers will vary depending on location and date, but should include all or some the information shown:
Sunrise: 7:09 a.m.
Sunset: 19:19 (7:19) p.m.
Full Moon: April 2, 11:16 p.m.
6. Use the 'Sun, Moon, Seasons' option and find the *longitude* and *latitude* of your town or city.
Answers will vary depending on location and date, but should include all or some the information shown:
Latitude: 52.17°
Longitude: 106.67°
7. Use the 'Weather Maps' option to find what colour on the map represents 20 degrees Celsius.
Medium blue
8. Use the 'Weather Maps' option to find what colour on the map represents 80 to 100% chance of precipitation.
Dark blue
9. Use the 'Weather Maps' option to find what type of a system you are currently in, *High* or *Low Pressure*?
Answers will vary depending on location and date, but should include all or some the information shown:
Low pressure
10. Use the 'Weather Maps' option to find what your current wind speed is and the colour that represents this speed.
Answers will vary depending on location and date, but should include all or some the information shown:
15 km/h, lime green
11. Find the 'UV Report' option and find the current UV index and record the recommendations of this UV index rating.
Answers will vary depending on location and date, but should include all or some the information shown:
3 - Yellow - Moderate
Take precautions, cover up, wear a hat, sunglasses and sunscreen especially if you will be outside for 30 minutes or more. Look for shade near midday when the sun is the strongest.

12. Use the 'Statistics' option to find the yearly average statistics for your town or city. Include the maximum and minimum temperature, precipitation, relative humidity, wind speed and wind direction for this month.

Answers will vary depending on location and date, but should include all or some the information shown:

Maximum - -1°

Minimum - -11°

Precipitation total - 16 cm

Relative humidity - 76 kPa

Wind speed - 17 km/h

Wind direction - SE

Use the following web site to answer the questions shown below.

http://weatheroffice.ec.gc.ca/city/pages/sk-40_metric_e.html

13. What does Environment Canada say that your current temperatures are? Are they same as the statistics on the Weather Network?

Answers will vary depending on location and date, but should include all or some the information shown:

4° C Mostly Cloudy

Wind - S 8 km/h

Gusts -

Relative Humidity - 72%

Dew point -

Pressure - 99.6 kPa

Visibility - 24 km

Ceiling -

Updated: Saskatoon: Issued 11:00 a.m. CST Tuesday 20 March 2007

They may be different because of the different time the information was posted or submitted.

14. Check the 'Weather Warnings' option. What colours represent a weather warning and a weather watch?

Weather warning - red

Weather watch - yellow

15. Check http://www.msc-smc.ec.gc.ca/contents_e.html to find out what the Meteorological Service of Canada does?

The Meteorological Service of Canada (MSC) is Canada's source for meteorological information. The Service monitors water quantities, provides information and conducts research on climate, atmospheric science, air quality, ice and other environmental issues, making it an important source of expertise in these areas.

16. Return to http://weatheroffice.ec.gc.ca/city/pages/sk-40_metric_e.html and check the 'Weather Map' option. Under the heading of Jet Stream click on Canadian Weather at a Glance. Use this map to answer the following questions.

- a. Locate your town or city on the map. What colour is across where your town or city is located and what does this colour mean?

Answers will vary depending on location and date, but should include all or some the information shown:

Light blue

- b. What type of weather is showing on the map for your location (e.g. clear, cloudy, snow, rain, etc.)?

Answers will vary depending on location and date, but should include all or some the information shown:

Clear

- c. Is your area currently experiencing a high pressure system or a low pressure system?

Answers will vary depending on location and date, but should include all or some the information shown:

Low

- d. What unit is the pressure recorded in?

Answers will vary depending on location and date, but should include all or some the information shown:

Kpa or hPa

- e. Locate Greenland. What colour is across Greenland and what temperature does it represent?

Answers will vary depending on date, but should include all or some the information shown:

Dark blue - 40°