

READING A LOCAL AND NATIONAL WEATHER MAP

Student/Class Goal
 Students want to use weather maps to predict the weather to plan events for their families or to predict outside work activities. Some students want to use the weather map to plan travel or to communicate with friends and relatives in other parts of the country. The weather map in the local newspaper provides an opportunity for them to develop and practice map-reading skills that are included on the GED test.

Outcome *(lesson objective)*
 Students will read a local and national weather map, analyze the weather maps and summarize the weather forecast. Then make comparisons and draw conclusions about the weather in other cities and regions of the USA.

Time Frame
 2 one hour classes
 Optional 30 minute assessment

Standard *Read with Understanding*

NRS EFL 2-4

Purpose	Benchmarks	Word Knowledge	Benchmarks	Comprehension	Benchmarks
Purpose for reading	2.1, 3.1, 4.1	Decoding skills	2.3, 4.3, 5.3	Strategy use	2.11, 3.11, 4.11
Select text		Word parts		Text structural elements	2.12, 3.12, 4.12
		Context clues		Genres	
		Reference materials		Literary analysis	
		Word relationships		Drawing conclusions	2.15, 3.15, 4.15
		Content vocabulary	2.8, 3.8, 4.8	Making connections	2.16, 3.16, 4.16
		Figurative language			
		Fluency			

Materials
 Blank Ohio Map
 Local/national weather maps from the local newspaper or Internet
Weather Vocabulary Handout
Map Reading Skill Check Handout
Reading a Weather Map and Temperature Chart
 Portfolio Assessment

Learner Prior Knowledge
 Map reading skills will develop and review a knowledge base of Ohio and USA geography including Ohio and USA cities and states, regions, bodies of water, mountain ranges, deserts, etc. Students will need to know cardinal and intermediate directions. This helps strengthen the knowledge base of US geography tested on the GED test.

Instructional Activities

Step 1 - Distribute a blank Ohio map to each student. Read the narrative weather forecast for your city or region. Have students communicate the local weather forecast on the Ohio map without using words. They can use symbols, weather icons, numbers, colors, but not words.

Step 2 - Read the weather forecast for at least one other major city in Ohio in a different region and have the students add this forecast to their map. Have students highlight or label physical features in the state that could impact the weather: i.e. Lake Erie, Ohio River, other regional river, mountains.

Step 3 - Have students share their maps with a partner. Are there differences in their local weather maps? Did students use the same symbols or icons? Are some symbols easier to understand than other symbols? Could someone who doesn't speak English understand their weather maps?

Step 4 - students locate the national and local weather map in a local newspaper or print weather maps from the local

newspaper or weather Internet sites. Each student should have access to the same weather map either in a newspaper or a copy of the weather maps from the Internet. Students could share a map with a partner.

Step 5 - Have students locate the weather icons on the **local** weather map. Discuss the different icons used on the map. Have students consider the use of icons on the map compared to the words associated with the icons and the icons or symbols they used when they designed their Ohio weather map. Are icons standardized? Do all newspapers use the same icons? What common characteristics make icons easier to understand?

Step 6 - Have students brainstorm different forms of precipitation. List these on the board. How many different icons would your local newspaper need to represent different forms of precipitation? If students come up with a lot of forms of precipitation, have them suggest ways to group the descriptive terms into categories to limit the number of icons needed. Have students brainstorm icons for the different forms of precipitation.

Step 7 - Continue discussing with the students the features of your local weather map and local weather forecast. This could include daily high and low temperatures, record high and low temperatures, wind conditions, barometric pressure and humidity. Use the *Weather Vocabulary* handout to review unfamiliar terms with the student

Step 8 - Next class period, look at the **national** weather map. What symbols are used? Is there a legend? If the map is in color, consider how color is used. Review cardinal and intermediate directions. Ask the students to brainstorm geographical features that impact the weather in the US. List these on the board. They could include distance from equator, mountain ranges, deserts, and bodies of water.

Step 9 - Use the handout *Map Reading Skill Check* to review map reading skills. These are important for questions on the GED test. They apply to other USA maps as well as the weather map. Discuss the different skills and note any skills students find difficult. Some skills rely on prior knowledge of USA geography. Some students may need supplemental activities to build this knowledge base. Classroom resources, such as Steck-Vaughn Company's *Maps Globes Graphs* could be used.

Step 10 - Follow up with a portfolio assessment activity - *Reading a Weather Map and Temperature Chart*. This activity could be completed individually with a different weather map and provides independent practice reading a weather map. Students can reflect on whether they need additional practice reading maps or more background knowledge of USA geography before the GED test.

Assessment/Evidence *(based on outcome)*

Completed Ohio weather map
Teacher observation of participation in class discussion
Map Reading Skill Check handout
Reading a Weather Map and
Temperature Chart
portfolio assessment

Teacher Reflection/Lesson Evaluation

Not yet completed.

Next Steps

Many GED preparation textbooks contain GED practice questions where students have to read a weather map or a USA map and answer multiple choice questions.

Technology Integration

Local Weather Forecast <http://www.weathercentral.com/weather/us/states/OH/index.html>
Weather Icon Glossary http://www.worldweather.org/wx_icon.htm
Local & National Weather <http://www.weather.com>

Purposeful/Transparent

Students want to understand the weather forecast to plan events. Some students have friends or relatives in other parts of the country, and they like to know what the weather is like in other regions of the country. The weather map provides an opportunity for students to learn or review map reading skills tested on the GED test.

Contextual

Students see weather maps in newspapers and on TV. They are easily accessible on the Internet.

Building Expertise

Reading a weather map helps students review USA geography including the locations of major USA cities and regional features. Students review map-reading skills including directions and map symbols and features.

OHIO

www.50states.com



Weather Vocabulary

http://www.wcpo.com/weather/weather_glossary.html

Air Pressure: The weight and force of the air pressing down on the Earth and everything air touches. Changes in air pressure create winds, clouds, and clues about what weather may do.

Atmosphere: The envelope of air that surrounds the Earth.

Barometer: An instrument that measures air pressure by reacting to changes in increased or decreased pressure.

Blizzard: Sustained or gusty winds of 35 mph or more and falling or blowing snow creating visibility at or below a quarter of a mile. These conditions should last for at least three hours.

Blowing and Drifting Snow Advisory: Issued when blowing snow will restrict visibility to an eighth of a mile or less and cause significant drifting snow.

Dense Fog Advisory: issued when fog will reduce visibility to 1/8 of a mile or less.

Doppler RADAR: Radar used to measure which direction and how fast something is moving, such as the wind.

Freezing Rain: Rain that freezes upon contact with a cold object.

Freezing Rain Advisory: issued when ice buildup is expected to cause hazardous driving conditions, small branches to break or power lines to fall.

Freezing Rain Warning: issued when an 1/4 inch or more of ice is expected to accumulate. Widespread damage is likely due to the buildup of ice.

Front: The place where a mass of warm air meets a mass of cold air, usually causing a change in weather.

Heavy Snow: Six inches or more of snow in 12 to 24 hours across northern Ohio. Four inches or more in 12 hours, or six inches or more in 24 hours across southern Ohio.

Humidity: The amount of water vapor in the atmosphere.

Lake Snow Warning: issued when lake effect snow is expected to accumulate six inches or more in 12 hours across the snow belt of northeast Ohio.

Meteorology: The science of the atmosphere and weather forecasting.

Precipitation: Water that falls as rain, snow, sleet, or hail.

Relative Humidity: The percentage of water vapor actually in the air compared to the amount the air can hold at the temperature and pressure.

Severe Thunderstorm: A thunderstorm with winds greater than 57 mph or hailstones at least 3/4" in diameter or larger.

Sleet: solid grains of ice formed as rain freezes before reaching the ground.

Snow Advisory: Issued when 3 to 5 inches of snow is expected to fall, within 12 hours, over a large part of northern Ohio. When 1 to 3 inches of snow is expected to fall, within 12 hours, over a large part of southern Ohio.

Updraft: A strong air current, moving upward.

Wind Chill Advisory: Issued when wind chill temperatures are expected to be lower than 30 degrees below zero.

Winter Storm Outlook: alerts the public of the possibility of severe weather in the 48 plus hour time frame.

Winter Storm Watch: Alerts the public of the possible occurrence of blizzard conditions, heavy snow, freezing rain or heavy sleet. Watches are usually issued 12 to 36 hours before the beginning of the winter storm event.

Winter Storm Warning: Issued when heavy snow, heavy freezing rain or sleet is expected to occur. Winter storm warnings are usually issued 6 to 12 hours before the event is expected to begin.

Winter Weather Advisory: Issued when any two or more advisory conditions are expected to occur at the same time.

Map Reading Skill Check

Skill: Read a map title.

What is the title of this map?

Write a question that you can answer using this map.

Write a question that you could not answer using this map.

Skill: Read a map legend.

What is the symbol for a cold front?

How can a reader distinguish between rain and snow?

Skill: Identify directions on a map.

Read the weather map to determine what the weather will be like in the Northeast region of the United States.

Read the weather map to determine what the weather will be like in the Southwest region of the United States.

Skill: Locate major cities on a map.

What will the weather be today in Miami, FL?

What will the weather be today in San Francisco?

Skill: Locate states on a United States map.

What will the weather be today in Texas?

Which state will have colder weather today, Maine or Oklahoma?

What state will have precipitation today?

Skill: Identify major bodies of water and important physical features.

What body of water impacts the weather in eastern North Carolina?

What physical feature impacts the weather in western North Carolina?

What physical feature impacts the weather in Colorado?

What physical features impact the weather in Texas?

Skill: Make inferences and draw conclusions.

A high temperature extreme is most likely to occur in what area of which states?

Would you expect this area to be densely populated? Why or why not?

What vegetation would you expect to find in an area that has extremely high temperatures?

Name _____

Date _____

Reading a Weather Map and Temperature Chart

1. What is the expected high temperature today in Chicago?
2. What is the expected high temperature in New York City?
3. Which city will be warmer today, Billings, Montana or Atlanta, Georgia?
4. Which state is warmer today, Illinois or North Carolina?
5. Which cities have precipitation?
6. If you lived in Houston, Texas would you go to the beach today? What body of water impacts the weather in Houston?
7. What is one city that is located in the Pacific Northwest? What weather is predicted for the Pacific Northwest?
8. Which city is likely to be warmer today, Toronto, Ontario, Canada or St. Louis, Missouri? Why could you make this assumption?
9. What will the weather be like around the Great Lakes?
10. What city in the country is expected to have the highest temperature? What geographical factors influence this expected high temperature?
11. Compare the local and national weather maps. How are the symbols different?
12. Write a short paragraph to summarize the local weather forecast for the next three days.