

APES: Wind Webquest

Name: _____ Date: _____ Period: _____

Forces and Wind: Online Meteorology Guide

Visit the following website: [http://ww2010.atmos.uiuc.edu/\(Gh\)/guides/mtr/fw/home.rxml](http://ww2010.atmos.uiuc.edu/(Gh)/guides/mtr/fw/home.rxml)

From opening paragraph (question 1):

1. What is air pressure?

Click on "pressure"(questions 2-6)

2. "If the number of air molecules above a surface increases, there are more molecules to exert a force on that surface and consequently, the pressure _____ (increases or decreases)?"

3. What device is used to measure atmospheric pressure?

4. What unit of measure does aviation and television weather reports use for pressure?

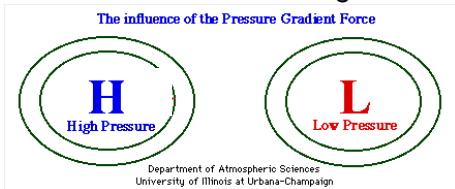
5. What unit do meteorologists use?

6. What is the average pressure at sea level (in millibars)?

Go back and click on "Pressure Gradient Force" (questions 7-9)

7. The pressure gradient results in a net force that is directed from _____ to _____ pressure and this force is called the "pressure gradient force".

8. Draw an arrow showing the direction of force:

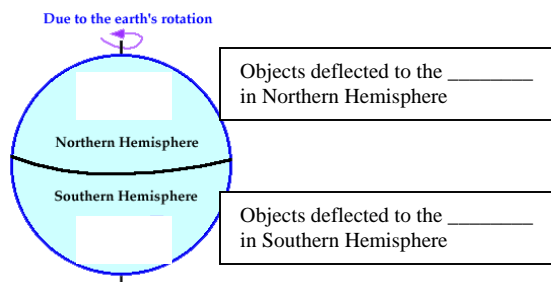


9. What is responsible for triggering the initial movement of air?

Go back and click on "Coriolis Force" (questions 10-16).

10. What causes the "Coriolis Force"?

11. Draw arrow to show the pathway of deflected wind in the diagram below. Fill in the statements to the right.



12. Slowly blowing winds will be deflected only a _____ (small or large) amount.

13. Stronger winds will be deflected a _____ (small or large) amount.
14. Winds blowing closer to the poles will be deflected _____ (more or less) than winds at the same speed closer to the equator.
15. What is the influence of the Coriolis force right at the equator?
16. Watch the “Real Life” Example Movie. Record your observations:

Go back and click on “Sea Breezes” (questions 17-).

17. What is a sea breeze? When do they usually occur? Why?
18. Draw an arrow showing the direction of the wind:

Sea Breeze



19. Which warms more rapidly: a large body of water or the land?
20. What is a "land breeze"? When do they usually occur? Why?
21. Where are “land breezes” the strongest?
22. Draw an arrow on the diagram below showing the direction of the wind:

Land Breeze



23. Which cools more rapidly: air over land or air over water?

Local Wind & Weather. Visit: <http://www.signonsandiego.com/>

Click on “Weather” (scroll down...it will be listed on the left side under “resources”)

1. What is the direction and strength of the wind currently in San Diego?
2. Click on “Satellite/Radar”. Click on “local Nexrad radar”. Describe what you see:
3. Click on “Local Forecast”. What do meteorologists predict the weather will be like the rest of this week?

“Drawing Isobars”: Visit the following website:

http://www.uwsp.edu/geo/faculty/ritter/geog101/textbook/manuals/instructor_manual/how_to/drawing_isobars.html

Isobars connect points of equal pressure on a weather map. Meteorologists can use isobars to determine the location of LOW and HIGH pressure systems, which can help them predict the weather. Click on the green right arrow to start the activity.

1. What is the LOW pressure isobar on the map?
2. How many millibars separate the isobars on the map?
3. Assume that there is a HIGH pressure system WEST of the map (Minnesota). Which direction do you predict the wind to move. (to the west or to the east). Why?
4. What do you think the weather is like around the LOW pressure? (clear or cloudy)
5. The closer the isobars, the greater the pressure gradient, and the (stronger or weaker) the wind?