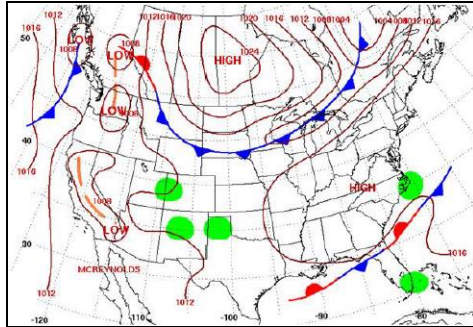
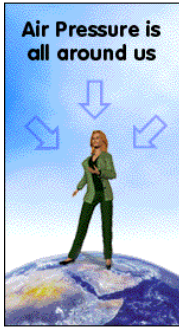


Name: \_\_\_\_\_

Date: \_\_\_\_\_

## Lab Report 5.05 – Barometers, Weather, and Air Pressure

Due by December 7 for full credit.



In this laboratory assignment, you will be acting as a meteorologist (one who studies and predicts weather) to investigate the relationship between **air pressure** and **weather conditions**. Air pressure is measured using a device called a **barometer** (top right picture). As a general rule, we tend to see certain weather conditions during high pressure days and other weather conditions during low pressure days. Use the lesson, student guide, and what you know about air pressure to answer the questions below and predict weather for several locations!

**Step 1:** Read lesson 5.05 carefully and download the [Student Guide](#).

**Step 2:** Watch the [Barometer Video Lab](#) to see how to build and calibrate a simple barometer and learn about air pressure.

**Step 3:** Answer questions 1-4 below using the data on page 3 and what you know about air pressure.

Confused about the relationship between air pressure and weather? Check out these links:

- <http://www.weatherwizkids.com/weather-forecasting.htm> (scroll down to the sections on H and L pressure).
- <http://usatoday30.usatoday.com/weather/wlowpres.htm>
- <http://www.komonews.com/weather/faq/4347756.html>
- [http://kids.earth.nasa.gov/archive/air\\_pressure/](http://kids.earth.nasa.gov/archive/air_pressure/)
- <http://science.howstuffworks.com/nature/climate-weather/atmospheric/barometer.htm>

**Step 4:** Turn in [page 2](#) of this report in the **5.05 Lab: Barometer 1 Dropbox** by Sunday, December 7 for full credit. Any work submitted after the midnight deadline will be counted for up to 70% of the points possible (30% off).

Click the following link for [Instructions to use Dropbox](#).

*Remember, we do not do Discussions in this course.*

**Note:** If you get confused, please send your teacher a kmail asking for help – but make sure to ask a *specific question* in your kmail so I can help you best!

This activity is a **VIRTUAL LAB!** That means you do **not** need to go gather the materials and conduct the lab at home. Just watch the [Barometer Video](#), read the lesson, and use the [Student Guide](#) to answer the questions!!

Name: \_\_\_\_\_

Date: \_\_\_\_\_

## Interpret Barometric Pressure Data and Weather Predictions

Use the Daily Weather Map and the Weather Data for Selected Cities table in the Student Guide to answer the following questions.

**(5 points)**

1. Look at the data on page 3 of the lab, specifically the air pressure column on the Weather Data chart. Do you think Tampa, FL will clear and become sunny within the next 12 hours? **Explain your answer.**

Score

Answer:

**(5 points)**

2. What type of weather is in store for Miami within the next 12 hours? Explain your answer. Your answer should describe the relative temperature and the conditions (sunny/cloudy/rainy/stormy) that you predict to occur in the region.

Score

Answer:

**(5 points)**

3. In a hypothetical city such as Gotham City, the temperature is dropping and the skies are clearing. How would the **barometer** be changing?

Score

HINT: A [barometer](#) is NOT a thermometer!

Answer:

**(5 points)**

4. On another day in Gotham City, the temperature is rising, the skies are getting cloudy, and some precipitation begins to fall. How would the **barometer** be changing?

Score

Answer:

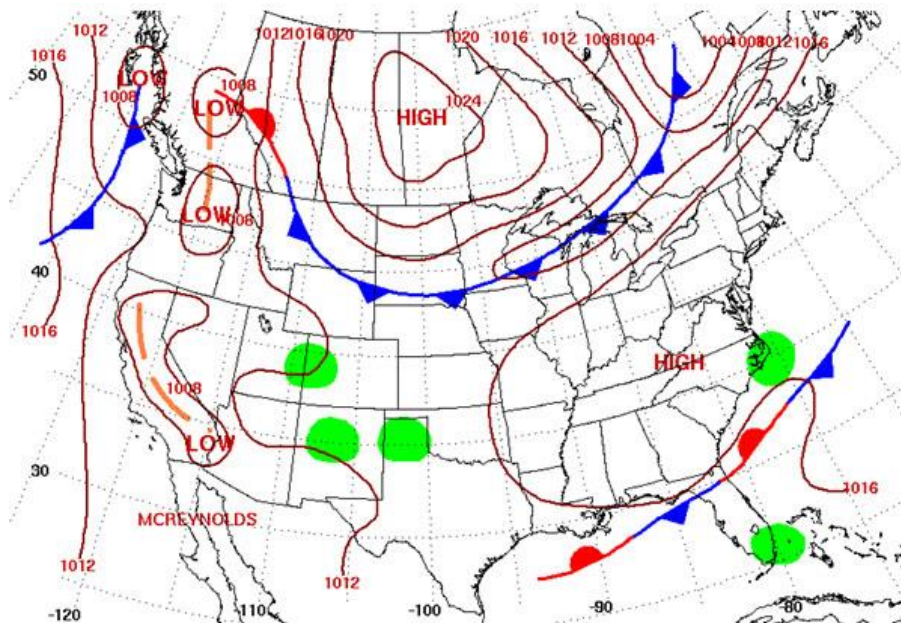
<b>Your Score</b>	___ of 20
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**Data:** You do NOT need to turn this page in.

### Interpret Barometric Pressure Data and Weather Predictions

Look at some weather data to see if you can interpret barometer readings and weather patterns. If you need to refresh your memory about what types of air masses are indicated by barometric pressures, reread the online lesson screens for this lab.

This Daily Weather Map from the National Weather Service is from September 8, 2006. The pressure isobars are indicated by the lines. Centers of high and low pressure are labeled. Fronts are represented by red lines with semicircles and blue lines with triangles. Areas of precipitation are shown in green. (See Weather Maps, pages 118–119 of *Earth Science: A Reference Guide*, for a review.)



In addition to the Daily Weather Map, here are some weather observations for selected U.S. cities on that day.

Weather Data for Selected Cities on Sept. 8, 2006 4:00 PM EST (Data obtained from the Weather Channel)				
City	Temp (F)	Pressure (in)	Wind (mph, direction)	Conditions
Tampa, FL	78	30.02 rising	2 WNW	Light Rain
Atlanta, GA	82	30.07 rising	6 NE	Partly Cloudy
Miami, FL	80	29.95 falling	7 NE	Mostly Cloudy
Asheville, NC	71	30.06 falling	4 SSE	Mostly Cloudy
Spokane, WA	82	29.75 rising	5 ENE	Sunny
Milwaukee, WI	83	29.92 falling	16 SW	Partly Cloudy
Detroit, MI	83	29.95 steady	13 WSW	Fair
Minneapolis, MN	64	29.98 steady	17 NE	Cloudy
Baltimore, MD	82	30.03 falling	9 SSE	Partly Cloudy
Savannah, GA	84	30.03 falling	9 ENE	Cloudy
Denver, CO	61	29.94 falling	6 WSW	Cloudy
Houston, TX	88	29.98 rising	8 ESE	Cloudy
Billings, MT	74	29.91 steady	Calm	Mostly Cloudy
Montgomery, AL	86	29.99 falling	6 ESE	Partly Cloudy
Boston, MA	81	29.99 falling	12 W	Cloudy
Bangor ME	71	29.97 steady	15 S	Mostly Cloudy
New York, NY	79	30.06 rising	13 SSW	Partly Cloudy
Bakersfield, CA	93	29.73 steady	17 NW	Sunny
St. Louis, MO	85	30.00 falling	3 W	Fair
Chicago, IL	83	29.94 steady	16 WSW	Fair
Raleigh, NC	82	30.06 steady	Calm	Partly Cloudy
El Paso, TX	79	29.80 falling	8 SSW	Mostly Cloudy