

Thermometerical Records

Captain Lemuel Moody was very interested in thermometerical records or simply put the weather. As an experienced sailor Moody knew the important role weather played in the efficient operations of a port city, if the weather was bad and ships were unable to sail merchants would need to make arrangements to unload cargo from vessels at anchor or wait for the weather to clear. Three times each day Moody would climb the stairs of the Observatory and take weather readings, including the temperature, and observations about the wind and general atmospheric conditions (cloudy, clear). This constant observing helped Moody know when storms may be coming and it allowed him to publish - monthly and yearly - weather reports. Although Moody could also make predictions about what type of weather was heading towards Portland and how long the system could be expected to last he was mostly in the business of reporting his weather observations. These weather reports allowed Moody to inform Portland residents of the average temperature in a given month or year. Merchants planning future voyages could use Moody's thermometerical records in addition of their vessel's log book to decide when it might be best to sail.

Activity: How's the weather out there?

Targeted Learning Results

Objectives:

Middle grades 5-8 Students will understand and apply concepts of data analysis.

Standards: Mathematics, Data Analysis and Statistics, # 1 and # 3

Secondary Grades: Students will gain knowledge about the earth and the processes that change it.

Students will understand and apply concepts of data analysis.

Students will apply inquiry and problem solving approaches in science and technology.

Standards: Science and Technology, The Earth, #1
Science and Technology, Inquiry and Problem Solving,
1, # 2 and # 4
Mathematics, Data Analysis and Statistics, #1, # 2 and
5

Materials: Thermometer
Barometer (see instructions on web-site listed below)
Anemometer (see instructions on web-site listed below)
Journal
Observatory weather slide show at Maine Memory Network

Everyone is interested in the weather! Have your students act as weather recorders/reporters for their school.

Each day students can record the temperature, wind velocity and barometric pressure outside their classroom window along with their observations of the atmospheric conditions. Enlist the help of other classes throughout the school - be sure to note in your records the direction each classroom faces. Each week students can report to the school the average temperature along with the month's high and low temperatures, average wind velocity and any "weather events" or storms.

Following Moody's example students can take weather readings three times a day and record them in a weather journal along with the temperature, wind velocity and barometric pressure students should also record what they observe - sunny, overcast, raining. Have your students use the information they recorded to create graphs and charts to depict trends in the weather. Post this information on a bulletin board outside your classroom and include it each week in the school's morning announcements. Students can also compare this year's weather with years past - pick a year when Moody was at the Portland Observatory and use the records available at Maine Memory Network to do the comparison. Or choose several years and different weather reporting sources, such as old newspaper accounts and the US Weather Bureau records to highlight a different year each week! Newspaper accounts can be found either at your local public library or historical society, for the US Weather Bureau visit: <http://www.history.noaa.gov/index.html>.

The US Weather Bureau began recording weather events, temperatures, wind velocity and barometric pressure in 1870. Before then local communities were keeping their own records. In Portland, Lemuel Moody began keeping records in 1816 and continued until he died in 1846. Moody's weather reports were published in the local paper, the *Eastern Argus*.

Invite a local meteorologist to speak to your class about the history of weather forecasting and weather recording. Have your class act as weather recorders and observers for the local news station. Students should watch the evening weather report and/or read the report in the newspaper to compare their weather readings with the published weather readings. Students can also check online at www.weatherchannel.com for a local

forecast and compare how accurate those predictions are with the data they are recording. For local forecasts on-line try these websites: www.wmtm.com, www.wcsh6.com or www.wgme.com/weather.

Make a Barometer and an Anemometer

Predictions of weather occur with the help of instruments that record temperature and air pressure changes among other factors. Have students make a barometer to record changes in the air pressure and an anemometer to measure the velocity of the wind. Students can use the information they gather to not only report their weather observations but to also make predictions.

Consult these web-sites for information on building barometers: www.sln.fi.edu/weather/todo/barometer.html or try [Consult this web-site for information on building an anemometer \[www.sln.fi.edu/tfi/units/energy/dixie.html\]\(http://www.sln.fi.edu/tfi/units/energy/dixie.html\)](http://www.starryskies.com-try>this/barol.html</p></div><div data-bbox=)