

BAROMETRIC PRESSURE GUIDE

Students are encouraged to make connections between the water cycle and one of the factors involved in weather changes. Barometric pressure recordings for the most recent week at Race Rocks are represented in a graph that is easy to compare to the wind speed for the same time period. Students will see that as barometric pressure falls, wind speed picks up and stormy or rainy weather is soon to follow.

Most middle school students do not make the connection that air has mass. A quick demonstration using a ruler and a sheet of newsprint on a desk can graphically demonstrate the weight of air. Smooth out the newsprint to maximum size and have about once third of the ruler protruding out clear of the side of the desk. One quick karate chop of the hand should break the ruler as the newsprint holds the remainder tight to the desktop. The column of air on the newsprint was pressing down creating a force that was stronger than the hand chop. This demonstration can lead into a short introduction on Barometric pressure.

The following template for student data responses as well as questions relating to this activity is provided.

OCEAN QUEST STUDENT ACTIVITY

name _____

ABIOTIC FACTORS: BAROMETRIC PRESSURE

PURPOSE:

To relate barometric pressure values to variations in weather conditions.

OBSERVATIONS:

Follow the Procedure for this activity STEPS 1,2 and 3 in Student Activity:
BAROMETRIC PRESSURE.

DATA TABLE:

Animals sighted from listed

Weather Data from sighting

	Temp (deg C)	Wind Speed (knots)	Direction	Barometer (mb)	Solar (Wm)	Rain (mm)
1. _____	_____	_____	_____	_____	_____	_____
2. _____	_____	_____	_____	_____	_____	_____
3. _____	_____	_____	_____	_____	_____	_____
4. _____	_____	_____	_____	_____	_____	_____
5. _____	_____	_____	_____	_____	_____	_____

COMPARING WIND SPEED TO BAROMETRIC PRESSURE

Follow STEP 4 in the activity to find the data to complete the following questions

1. The highest barometric pressure days of the week were _____.
2. On these days the wind speed was (high or low) indicating (fair or stormy) weather.
circle one circle one
3. The lowest barometric pressure days of the week were _____.
4. On these days the wind speed was (high or low) indicating (fair or stormy) weather.
5. In conclusions, when the barometric pressure is high, the weather will be _____
and when the barometric pressure drops the weather will become _____.

SHARE YOUR KNOWLEDGE

Complete the following conclusion questions.

1. What range of barometric pressure was recorded most often for the sightings you researched? A) 900 – 950 B) 950 – 1000 C) 1000 – 1050
2. When barometric pressure registers 960 millibars at race rocks, what kind of weather will occur?
3. What kind of weather is likely to occur at 1050 millibars?
4. Would you expect to see more bird sightings resting at barometric pressure readings of 960 or 1050 millibars? Give a reason for your answer.
5. If birds could sense changes in barometric pressure, how might low pressure affect the amount of time they spend; resting, feeding, and or flying?
6. How might seals or sea lions respond to very low barometric pressure?