

NAME _____ CLASS _____

ISOPLETH ACTIVITY 3 ISOBARS

Upon completion of this activity, you should be able to know or have a better understanding of:

- How a barometric pressure map is analyzed using equal lines of pressure called isobars.
- How to draw isobars on a current weather map using raw data supplied by the National Weather Service.
- How to recognize pressure patterns such as highs and lows because of pressure gradient changes.
- How forecasters use isobars to help make weather forecasts and predictions of stormy weather.
- How significant pressure changes can affect the lives of people, crops, livestock, wildlife, and even possibly help transmit diseases over an area.

ACTIVITY DESCRIPTION

In this activity you may work alone or in pairs as directed by your teacher. This activity will show you how pressure patterns and their movement are very important and how a forecaster might use isobars to help make a forecast. It can also show you how a frontal boundary is moving, which could help give an early warning of oncoming weather changes. Drawing isobars will be a little more challenging than isotherms, so be patient.

MATERIALS

- Pencils with good eraser
- Current national pressure map
- Map colors

METHODS/PROCEDURES

- Select different colors for the various pressures on the map. It is a good idea to start with 1000mb and go in increments of 4. (Examples: 1000mb = blue, 1004mb = green, 996mb = yellow, 992mb = orange etc.)
- Place a colored dot at each station that matches the proper colors for pressure.
- Draw in isobar lines of 992, 996, 1000, 1004, 1008, 1012 etc that separate the values
- Color in the different gradients with appropriate colors you chose.
- Analyze the gradients as large or small

RESULTS

You should be able to find pressure patterns easily on your map now. A large gradient (large change over a small area) often indicates stormy weather and a small gradient usually indicates settled or fair weather. Check with your local television station tonight to see if you are correct. Watch the weather patterns again tomorrow and see how the patterns change.

CONCLUSIONS

1. Can you find an area that is likely to be stormy or unsettled today by using isobars?
Where?
2. Can you find an area that the weather would mostly be very nice today?
Where?
3. Many times high winds are associated with a large pressure gradient. Where would you suspect high winds to be today?