

Weather Watchers

Summary

Students will use weather instruments and the Internet to monitor the weather for a week. They will make graphs that compare weather factors analyze their relationships.

Main Core Tie

Science - Earth Science

[Standard 3 Objective 2](#)

Time Frame

3 class periods of 45 minutes each

Group Size

Small Groups

Materials

- cloud chamber or clear 2 liter plastic bottle
- thermometer
- barometer
- sling psychrometer
- cloud chart
- wind meter
- [student sheet](#)
(attached)

Background for Teachers

Time Needed:

45 minutes the first day, 10 minutes each day for 3 more days and 45 minutes the last day.

Instructional Procedures

Procedures: First-make sure the weather pattern is changeable during the week you are going to do this. 5 days of high pressure will be very boring, choose a week with a storm coming in.

As a "hook" activity, show students a cloud chamber and make a cloud. Follow the directions if you have a commercially produced one or you can make one using a two or three-liter clear pop bottle. Put a tablespoon of water in it, place the cap on and shake it to thoroughly saturate the air in the bottle. Light a small candle (like a birthday candle) and place it in the mouth of the bottle until it goes out and smokes. Cap the bottle tightly and squeeze and release it several times. It may take some practice but if you watch carefully, a "cloud" will form. This could be a student activity also.

Explain to students that energy is used to evaporate the water in the atmosphere, convection allows it to rise and expansion in the upper atmosphere cools the air, condensing the water. The website in #4 has a nice description of this process.

Explain the use of each weather instrument. The thermometer should be familiar but the sling psychrometer and barometer may take some explanation. A neat site for the psychrometer is located at: [Weather Calculator](#) It will take the dry bulb, web bulb and air pressure readings and tell you the relative humidity.

Explain that students will be checking the cloud type and percentage of the sky covered. Since the percentage is what they will graph, it is quite important. An online skychart is located at: [Jetstream: Online School for Weather](#)

The data for any of the equipment you are missing can be easily accessed from the Internet on a site like: [NOAA Weather Forecast](#)

On the first day, show the students how to use the instruments and then take them outside in groups that collect one of the specific weather data points, on the following days, send only enough to take the data.

Share the information each day as students collect it. You may wish to have the IMC in your school available for your students to access a computer if you do not have a classroom computer they can use. You can also project the website on a projector if you have access to one.

Do the graphing and analysis on the last day. Student may need help understanding a direct and inverse relationship. There are several relationships you may see depending on the weather you had for your week.

Bibliography

Lesson Design by Jordan School District Teachers and Staff.

Authors

[Utah LessonPlans](#)