Investigation Eight – Predicting and Evaluating Weather Forecasts

Standard II Students will understand that the elements of weather can be observed, measured, and recorded to make predictions and determine simple weather patterns.
Objective 3 Interpret recorded weather data for simple patterns.
Intended Learning Outcomes 1. Use science process and thinking skills 2. Manifest scientific attitudes and interests 3. Understand science concepts and principles 4. Communicate effectively using science and language and reasoning

Standard II

Objective 3

Background Information

This investigation is based on the weather data gathered in Investigation Six. Meteorologists stake their reputations on the forecasts they project on the TV, radio, and newspapers. Most of the time they are right, but sometimes they are wrong. When they don't give an accurate forecast, they will evaluate their predictions and go over the information again to see why they were wrong. Sometimes a storm changes at the last minute and goes another way.

Their forecasts have dramatically improved the past decade because the weather instruments they use are very sophisticated. The invention of weather satellites is probably the greatest improvement. The satellites take pictures and gather other weather information. The satellite information along with other weather information is uploaded into computers. The computers actually make the forecast. it is the role of the meteorologist to verify the information. With the use of graphics, The meteorologist can show us and explain in simple terms what is happening and why it's happening. It has helped the average person, who doesn't know a lot about the weather to understand the forecast that is given. We rely more on the weather prediction we see on TV or in the newspaper than we have ever done before. We are becoming more and more removed from making our own predictions.

The weather affects all of us each day. A weather forecast helps us to know different things, from what type of clothes we should wear to whether we should even be outside during a bad snowstorm. We make many decisions based on weather predictions.

Materials

- ☐ Completed "Weather Forecasting Data Table"
- ☐ Graphs of the weather Components made in the last Investigation
- ☐ Current weather forecast from a newspaper

Pre-Assessment/Invitation to Learn

Discuss with the students why weather predictions are important to us. Ask them what people do after they hear a forecast.

Take out a current forecast of today and read it to the students. Look at the weather outside to see if the forecast is true. Ask them if they knew what the weather was going to be today, if it affected what they wore. Ask

the students who didn't know what the forecast was going to be today how they knew what to wear.

Have the students brainstorm reasons forecasts are important to people. There may be a heavy snowstorm and those who do snow removal must know that they will have to get up early. Others may leave early to miss the traffic. It alerts the police that there will probably be problems on the roads during the day.

Make up another scenario and have the students tell about all the types of people it will affect. You could also direct a class discussion by suggesting people yourself.

Instructional Materials

Materials

- ☐ Filled in weather data chart
- ☐ Graphs of the weather components made in the last
- ☐ Investigation Written observations and comparisons from the last Investigation
- ☐ Rain Gauge
- ☐ Thermometer
- ☐ Barometer
- ☐ Wind meter

1. Go over the tools of a meteorologist, describing what they do and how they are used.
2. Remind the students what they did in the last Investigation. (They graphed the weather data, looked for patterns, and found relationships between the graphs Have the students evaluate, again, if their predictions were right when they were gathering data.
3. Have the student evaluate if their predictions were close to the professional weather forecasts.
4. Review the written observations and comparisons they wrote from the last Investigation.
5. Now that the students understand the uses of weather instruments, they are familiar with patterns and know more about making predictions. Have them record the data of weather observations for one more week. This time it is for the sake of making accurate predictions.
6. Take the whole class out each day for a few minutes to make use of the instruments. Come back inside and have them make a prediction. Have them check a professional weather forecast.
7. The next day have them check for accuracy and do the process again for as long as needed.

Curriculum Extensions

Science –

- After you have checked the www.ksl.com Web site each day to see what their prediction is for the following day, discuss it as a class as to the difference between your prediction and the commercial prediction. (ILO 2)

Language Arts –

- Prepare and present a weather forecast each day for the school or class. (Standard VII, Objective 6)
- Bring in weather maps and forecast charts from the newspaper each day to discuss in class. (Standard VII, Objectives 1,2)

Fine Arts/Theater-

- Watch a weather forecast on TV. Prepare skits doing your own weather forecast as groups. (Standard I, Objective 1)

Assessment Suggestions

- Have the students describe why it is possible for them to make weather Predictions with the simple weather tools coupled with observations.
- Have the students describe how the weather affects people.
- Have the students describe why weather forecasts are given.
- Have the students relate why forecast accuracy is important.

Resources

Newspapers:

- Students can bring in newspapers with daily weather maps and forecasts.

Web sites:

- www.ksl.com (For current weather conditions and facts.)
- www.brainpop.com
- www.digitalcurriculum.com/dcdoor.php4
- http://deseretnews.com/weather/weather.htm
- http://galaxy.net/-k12/weather
- http://www.uen.org/weather/html/link2/htm
- http://www.earthwatch.com

Videos:

- Check district media centers for these videos:
    - *Restless Atmosphere*
    - *What Makes Weather?*
    - *Meteorology*
    - *Weather Class with Dr. Niel Frank*
    - *Weather Express*
    - *Weather Station Backyard Science*
- There are also commercial weather videos available.

Homework & Family Connections

- Students with internet connections at home can be asked to visit weather Web sites.
    1. www.brainpop.com
    2. www.digitalcurriculum.com/dcdoor.php4
    3. http://deseretnews.com/weather/weather/htm
- Students can be assigned to watch the evening weather forecast on one of the TV news channels.
- Have the students set up a weather station at home to continue their investigation about weather.