WEATHER-FORECASTS-LESSON 8
GRADE 3-5

BACKGROUND

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 to wear to whether we should even be outside during a bad snowstorm. We make many decisions based on the weather prediction.

BASIC LESSON

Objective(s)

Students will be able to…

- learn how to predict and evaluate weather forecasts based upon observational data.

State Science Content Standard(s)

Standard 1. Students, through the inquiry process, demonstrate the ability to design, conduct, evaluate, and communicate results and reasonable conclusions of scientific investigations.

1.2. Select and use appropriate tools including technology to make measurements (including metric units) and represent results of basic scientific investigations

1.3. Use data to describe and communicate the results of scientific investigations

Materials		Safety
From the Kit	**Provided by Teacher**	• none
• Rain gauge • Thermometer • Barometer • Wind Meter (Anemometer) • Weathervane	• Completed Weather Forecasting Data Table – Lesson 6 • Graphs from Lesson 7 • Weather Forecast from paper or Internet Source	

• Cloud chart		
Key Vocabulary		**Mastery Questions**
• Weather • Barometer • Rain gauge • Thermometer	• Wind vane • Anemometer • Pressure • Forecast	• See Lesson

Detailed Plan

Engage

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 and 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. Refer to the data table and graphs of Lesson 6 and 7. Did what they learn help them predict and decide what they needed 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. Write suggestions on the whiteboard or poster board.

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.

Exploration/Explanation

1. Go over the tools of a meteorologist, describing what they do and how they are used. (See Lesson 6 for information)
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 and wrote them down.)
3. Have the students evaluate, again, if their predictions were right when they were gathering data.
4. Have the students evaluate if their predictions were close to the professional weather forecasts.
5. Review the written observations and comparisons they wrote from the last Investigation.
6. 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.
7. 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.
8. The next day have them check for accuracy and do the process again for as long as needed.

9. Watch a weather forecast on TV. Prepare skits doing your own weather forecast as groups. Have them use their own daily forecasts. Students can be assigned to be responsible for different days' forecasts.

Extensions

Science-

After you have checked the http://www.wunderground.com/weather-forecast/US/MT/Helena.htm website 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.

Language Arts-

Prepare and present a weather forecast each day for the school or class.

Bring in weather maps and forecast charts from the newspaper each day to discuss in class.

Fine Arts/ Theater-

Homework & Family Connections

- Students with Internet connections at home can be asked to visit weather websites.
- 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.

Assessment

- 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

Adapted from Utah LessonPlans

Other Resources

- UEN Internet Weather Links
- Deseret News Weather
- BrainPop

Newspapers:

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

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
  - Any other videos that will enhance the students learning
- There are also commercial weather videos available.

For local weather: http://www.wunderground.com/weather-forecast/US/MT/Helena.htm