

TRB 4:2 - Investigation 8 - Weather Forecasts

Summary

Students will learn how to predict and evaluate weather forecasts.

Materials

Pre-Assessment/Invitation to Learn Materials

Completed ["Weather Forecasting Data Table"](#) (pdf)

Graphs of the weather components made in [Investigation 7](#)

Current weather forecast from a newspaper

Instructional Procedures Materials

Completed ["Weather Forecasting Data Table"](#) (pdf)

Graphs of the weather components made in [Investigation 7](#)

Written observations and comparisons from the last Investigation

Rain Gauge

Thermometer

Barometer

Wind meter

Additional Resources

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

There are also commercial weather videos available.

Background for Teachers

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 the weather prediction.

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

Instructional Procedures

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 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

Go over the tools of a meteorologist, describing what they do and how they are used.

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.)

Have the students evaluate, again, if their predictions were right when they were gathering data.

Have the students evaluate if their predictions were close to the professional weather forecasts.

Review the written observations and comparisons they wrote from the last Investigation.

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.

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.

The next day have them check for accuracy and do the process again for as long as needed.

Extensions

Science-

After you have checked the www.ksl.com 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. (ILO 2)

Language Arts-

Prepare and present a weather forecast each day for the school or class. (Standard VIII, 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 1, Objective 1)

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 Plan

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.

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