

Meet the Weather Scientist

4th Grade

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1. References:

- “Water Affects the Weather” lesson plan from 4th grade curriculum guide

2. Benchmarks:

ES-4, ES-5, ES-7 & SWK-4 (Benchmark D): Describe weather by measurable quantities such as temperature, direction, wind speed, precipitation, and barometric pressure. Record local weather information on a calendar or map and describe changes over a period of time. Describe the weather which accompanies cumulus, cumulonimbus, cirrus, and stratus clouds. Identify various careers in science.

3. Objectives:

One does not need to be a meteorologist to study the weather, thus the students themselves can collect, record and analyze data using simple weather instruments or using weather resources to understand weather. The students should understand that scientists are very important people in today’s world, and they should be familiar with some that have advanced the field of science.

4. Materials:

- Thermometer
- Wind Vane
- Rain Gauge
- Barometer
- Anemometer
- Cloud Finder
- Weather Journal

5. Initial Demonstration:

Read to the students the paragraph on Page 28 of their weather journal about Dr. Warren M. Washington, a meteorologist that has advanced the field of meteorology. Have the students make comments about the paragraph aloud, followed by having them record two facts about Dr. Washington on a clean sheet of paper. This needs to be taken up and graded. End the discussion by talking about some other fields of science and what types of tasks that they do in the field and in laboratories.

6. Target Observations:

- The work of scientists and their knowledge has helped us make many new inventions and innovative discoveries in medicine to help us live longer.

7. Target Model:

- Using measurable quantities such as temperature, direction, wind speed, precipitation, and barometric pressure, weather can be measured. Through observations of the weather, one can describe the changes over a period of time.

8. Procedure:

Have the students turn to **Page 23-24** in their weather journals. As a class, we will go outside and continue to observe the various weather conditions. The students will be working in pairs to collect the weather data, and each pair should have their Cloud Finder and a thermometer. The students should first sit in a circle around the instructor to collect the wind direction using a classroom wind vane. The barometric pressure can be measured with a classroom barometer by having one student tell the entire class what the pressure reads. The wind speed will be measured using the classroom anemometer by standing in the center of the circle. With the students sitting, have them count the number of revolutions the anemometer makes. The students should then scatter out to measure the air temperature and determine the cloud type and conditions. Lastly, the class should investigate the rain gauge to check for precipitation. As the students make their observations, each should be recorded in their journal. Return to the classroom to discuss the observations that everyone had collected.

9. Target Observations:

- Simple weather instruments can be used to understand the local weather.
- Cloud types can help predict the weather.

10. Revised Target Model:

- Weather conditions measured one day could be quite different from previous or next day.
- If the cloud type is the same as the previous day, the weather should be similar.

11. Summary:

The students themselves will collect, record and analyze data using simple weather instruments, as well as use cloud types to predict weather conditions. Scientists play a critical role in our everyday lives with their discoveries in numerous fields of study.