

**Grade Level: 2**

**Title: Weather Watchers (All Year)**

**Purpose:**

Students will analyze the weather patterns by using various weather instruments.

**Subject Area(s) Addressed:**

Science and Math

**Common Core/Essential Standards:**

**Science:**

2.E.2.2 Summarize weather conditions using qualitative and quantitative measure to describe:

- Temperature
- Wind direction
- Wind speed
- Precipitation

2.E.2.4 Recognize the tools that scientists use for observing, recording, and predicting weather changes from day to day and during the seasons.

**Math:**

2.MD.7 Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.

**Vocabulary:**

- anemometer
- barometer
- precipitation
- temperature
- wind direction
- wind speed

**Materials Needed:**

- weather instruments
- graph paper
- science journals

**Teaching Strategy:**

**Essential Questions:**

What weather tools would a farmer use to help on the farm? Why would each one be important? How is each one used?

What patterns of weather do you see (temperature, precipitation, time of day, season)?

What weather tools would a farmer use to help on the farm? Why would each one be important? How is each one used?

Discuss the importance of observing weather conditions. Begin by talking about something they can relate to more concretely. “Do you or your parents watch or listen to the weather? How often? Why? Do you think farmers watch the weather? Why or why not?” Talk about the fact that a farmer is a diligent weather watcher. If you have an outdoor classroom you can arrange a weather station outside by your garden. If not, you can do daily weather observations from the classroom. Refer to “Background Information” for discussion on weather.

By looking at the growing season of strawberry plants you can see the effects that the weather has on plants. Once you begin your observation of weather you begin to notice patterns. Have students compare and contrast these patterns. Continue this process over the school year so that students can see relationships.

**Activity:**

Have students keep science journals for weather. Have them forecast/predict the weather daily and record the maximum and minimum precipitation, temperature, and wind speed. Discuss the various instruments used by farmers and other people to measure weather conditions – thermometer (temperature), rain gauge (precipitation), and anemometer (wind speed). Have students record their data on a graph and analyze the patterns they see. Have students also note the time they are collecting their data; the times of observation will itself be a factor in this data.

**Extension Activities:**

Have a strawberry farmer come in and discuss how the weather affects the strawberry crop throughout the year.

Make “weather observations” part of your Daily Routine/Calendar Time.

**Background Information:**

Weather is one of the most crucial variables for strawberry farmers’ success. Each year, they try to figure the best time to set out their plants based on what they think the coming year will be like. Yields and the start of harvest are affected by when they plant and how cool/warm the weather is in the fall, winter, and spring.

The most sensitive period is in the spring, when the plants are flowering and frosts can damage or kill the flowers, buds, and developing fruit. Growers then protect their plants with overhead irrigation and/or row covers. During that vulnerable period, growers listen carefully for forecasts of a frost/freeze event in their area. Many have frost alarms that will wake them up at night when

temperatures fall to a certain level, so they can get up and start their irrigation system (which they have to do before temperatures actually reach freezing). Frost/freeze events happen every year, and strawberry growers are prepared for them. (School gardens will want to watch the weather too, and cover their plants if frost might damage them.)

Other particular weather issues for strawberries:

1. Very cold weather (below 15-20 degrees F) Dec-Feb can damage plant crowns. Growers sometimes cover plants with row covers then.
2. Hot weather in March-April (above 85-90 degrees F) can kill flowers. Some growers give their plants cooling showers with short bursts of their irrigation on these very hot days. They generally don't continue this practice after harvest starts.
3. Rain during harvest damages fruit, makes pick-your-own customers reluctant to come to the farm, and encourages plant diseases. A rainy weekend can be a serious economic loss for a farmer.
4. Drought is not generally a problem, because farmers have drip irrigation. But if it is very dry in the summer, it can be hard to get the land ready, and extended drought can reduce irrigation water supplies in farm ponds.

Websites where farmers go for weather information:

<http://strawberries.ces.ncsu.edu/author/strawberries/>  
[www.skybit.com/e-weather/agweather/ipm-strawberry-canopy/](http://www.skybit.com/e-weather/agweather/ipm-strawberry-canopy/) (This is one of several subscription products, but this page gives the idea.)

## **Assessment:**

Information recorded in science journals

**North Carolina Strawberry Association – [www.ncstrawberry.com](http://www.ncstrawberry.com)**

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