

## **Title:** Weather Watchers

**Objective:** Observe weather trends; make predictions; create graphs with data.

**Time:** 20 minutes (first day); 5 minutes daily for the data collecting period; 15-20 minutes for graphing and data analysis (final day).

**Materials Needed:** Journals, pencils, *Minnesota Weatherguide Environment™ Calendar*, color pencils, Weather Watcher Chart (found at [jeffersfoundation.org](http://jeffersfoundation.org))

### **Activity**

#### **Theme: Weather**

Topic: Cloud identification & weather forecasting

Suggested Grade Level: K-5

Indoors or Outdoors: Outdoors

Daily observations - Outdoors/At Windows

## **Directions:**

1. Ask students to look up and observe the sky for 30 seconds. Then, students should turn and talk with a classmate to share what they noticed. Their observations may be about the color of the sky, the presence or absence of clouds and breeze, direction of wind, temperature, etc.
2. Students write observations, sketch clouds, and make weather predictions in their journals.
3. Inform students that observations of the sky, including clouds, help scientists predict what type of weather will be experienced in the coming hours. In order to communicate one's observations of clouds accurately, specific language has been developed.
4. Share historical weather data for the current date and the upcoming week (temperature and rainfall averages are in Freshwater's *Minnesota Weatherguide Environment™ Calendar*). How much, on average, does it rain or snow during the next five days (historically)? Ask, "how many days do you think it will rain/snow in the next five days? What do you think the sky will look like each day?"
5. Hand out the Weather Watchers Chart. Students should make predictions of each of the weather conditions. Students will collect data for five days, marking an "X" in each box for the weather conditions they observe on each of the following five days. Data analysis can be completed after data collection wraps up on Day 5.
6. Use graph paper (or journals) and color pencils to create a bar graph of the "Actual" amounts observed.

## **Discussion Questions:**

1. How did your predictions for specific weather conditions compare to the actual data collected?
2. What patterns did you notice as we observed the sky and weather conditions?
3. How might the accuracy of our predictions be improved?

## Science/Engineering Practice:

4. Analyzing and interpreting data; 6. Constructing explanations; 8. Obtaining, evaluating, and communicating information.

## Crosscutting Concept:

1. Patterns; 2. Cause and effect: mechanism and explanation.

## Disciplinary Core Ideas:

Earth and Space Sciences: ESS2: Earth's systems.

## Background Information:

- **Cirrus Clouds** are located high in the sky and look as though someone took a paint brush and made light wisps across the sky.
- **Cumulus Clouds** are located middle to low in the sky and are big, white and puffy.
- **Stratus Clouds** are located low in the sky and blanket the sky blocking out the blue sky and sun at times.
- **Partly Cloudy**- The sky is not completely covered with clouds. A mixture of blue sky and clouds.
- **Overcast**- The sky is completely covered with clouds.
- When clouds that are associated with precipitation form, the Latin root “Nimbus” is added to the cloud name. For example: “Nimbostratus” clouds are seen as a low to mid-level blanket of clouds that brings light or steady rain showers. “Cumulonimbus” clouds on the other hand, appear as tall puffy clouds which produce rain showers and thunderstorms.

## Additional Resources:

- *Peterson First Guide to Clouds and Weather* by John A. Day, Vincent J. Schaefer, and Roger Tory Peterson
- *Freshwater Minnesota Weatherguide Environment™ Calendar*, found at <https://jeffersfoundation.org/>
- NOAA <https://www.noaa.gov/education/resource-collections/weather-atmosphere/weather-systems-patterns>

**Extension:** (Addresses Science and Engineering Practices: 5. Using mathematics and computational thinking.) Students calculate percentages and fractions for each weather occurrence observed during the week. Example: Rain on 4 of 5 days. Percent= 80%. Fractions=4/5 and so on...

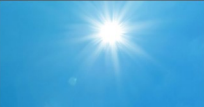







## Correlates with:

Greeting - Good Morning, Cirrus (p. 11)

Interdisciplinary Lesson - Cloud Art (p. 86)

## Weather Watchers Data Collection Sheet

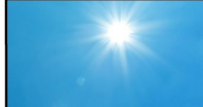







Your name: \_\_\_\_\_

Weather Type	Your Prediction	Day 1	Day 2	Day 3	Day 4	Day 5	Actual
							
Sunny							
							
Partly Cloudy							
							
Overcast							
							
Cirrus Clouds							
							
Cumulus Clouds							
							
Stratus Clouds							
							
Rain							
							
Snow							

First, enter your predictions. How many of the next five days will have that weather type? Next, observe the weather for the next five days. Add a check mark if that weather appears. After five days, add the check marks for each weather type in the Actual box.

## Weather Watchers Data Collection Sheet

Your name: \_\_\_\_\_

Weather Type	Your Prediction	Day 1	Day 2	Day 3	Day 4	Day 5	Actual
							
Sunny							
							
Partly Cloudy							
							
Overcast							
							
Cirrus Clouds							
							
Cumulus Clouds							
							
Stratus Clouds							
							
Rain							
							
Snow							

First, enter your predictions. How many of the next five days will have that weather type? Next, observe the weather for the next five days. Add a check mark if that weather appears. After five days, add the check marks for each weather type in the Actual box.