



3.6 MONTHLY WEATHER SUMMARY

OBJECTIVES

The students

- Collect and summarize monthly weather data about local weather conditions including wind speed and direction, rainfall, temperature, and cloud cover.
- Compare average monthly wind speed and direction.
- Identify the monthly prevailing wind direction.
- Compare the depth of rain falling in different months.
- Make generalizations about relative temperature for morning, noon, and afternoon.
- Make hypotheses and generalizations about temperature and months and seasons.
- Compare the amount of cloud cover in different months.
- Make predictions about future weather.
- Identify and describe local seasonal weather patterns.

CLIMATE EDUCATION FRAMEWORK

- 3-5Weather.A.1 By measuring weather conditions (temperature, amount and kind of precipitation, amount and kinds of clouds, wind direction and wind speed), scientists learn how the weather changes from day to day, month to month, and during the year.
 - 3-5Weather.A.2 Scientists analyze records of the weather that has happened in different places in the different times of the year. There are patterns to the kinds of weather that happen in a place and at different times of the year.
 - 3-5Weather.A.3 Scientists predict the weather that might happen in the next couple of days using measurements of the weather that is happening right now in a place and also about the weather patterns that happen in that place.
 - 3-5Climate.A.2 Pacific islands that are near the equator have warm climates. The temperature does not change very much from day to night. Temperatures do not change very much from month to month over the course of a year.
 - 3-5Climate.A.3 Many tropical Pacific islands have a wet season and a dry season.
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BACKGROUND

In this activity the students summarize the daily weather data they have collected month by month. They will describe the monthly weather and look for patterns. It is suggested that the teacher work with the whole class to summarize the data the first month. After that, the students can be divided into groups as suggested in the first procedure. These monthly summaries also provide an opportunity to revise their working definitions as needed.

As is appropriate to the local community the students can also summarize their data seasonally and make seasonal comparisons.

At the end of the year the students will use these monthly summaries to analyze the weather throughout the school year. They will look for patterns and correlations between weather elements.

STUDENT ROLES

Meteorologist

MATERIALS

Chart paper and markers

Daily weather data on kind of weather, rainfall, temperature, wind speed and direction, and cloud cover

Working Dictionary

Connections Book

Student Page 3.6A Weather Summary

Student Page 3.6B Weather Predictions

PRODUCTS

Weather Prediction Chart

Working Definitions of weather related terms

Monthly weather data summaries and descriptions

Class Chart about Weather Data Comparisons

Completed Student Pages

PROCEDURES

1. **At the end of each month have the students work in small groups to summarize the daily weather data collected for that month.**

Assign each group to a particular kind of data such as

- Kinds of weather
- Rainfall
- Wind speed
- Wind direction
- Temperature

✓This can be 2 or 3 groups, one for each time the temperature is recorded during the day.

- Cloud cover

Have them collect the data requested on Student Page 3.6A WEATHER SUMMARY and record it on the class summary sheet.

✓See specific directions and class discussion questions in the following procedures.

Keep a class summary for each month with the class weather data for future comparisons.

2. **At the end of each month have the students summarize the kind of weather by counting the number of days with common weather conditions.**

Discuss the monthly data using questions such as

- What was the most common kind of weather this month?
 - What was the least common kind of weather?
 - What could you use as a general description of the weather for this month?
 - Is that the kind of weather you predicted for this month?
 - What do you think will be the most common kind of weather next month?
- Record their ideas on SP 3.6B Weather Predictions.

3. **At the end of each month review the wind speed and direction data with the students.**

Ask such questions as

- What was the fastest wind that you recorded? Slowest?
 - What was the speed of the wind most of the time?
 - What kind of weather do we have when the wind seems to be the fastest? When it blows slowly or not at all?
 - What direction does the wind seem to blow from most of the time?
- ✓Introduce the term *prevailing wind* if applicable.
- How does this month's wind data compare with the predictions you made?
 - What do you think the wind will be like next month? Record their ideas on SP 3.6B Weather Predictions.

4. Use the class bar graph of the rainfall amounts for each week and the monthly summary data to discuss the monthly rainfall data.

Ask such questions as

- When was the heaviest rain?
- How often did it rain?
- How does this month's rainfall compare with the predictions you made?
- Do you predict that there will be more, less, or the same amount of rain next month? Record their ideas on SP 3.6B Weather Predictions.

5. *During the first monthly weather summary after the students begin recording daily temperature data, have the students analyze the morning, noon, and afternoon temperatures using the questions in Procedure 8 in Activity 3.4 Temperature. After that use Procedure 6 below.*

6. Review the class graph of daily temperatures during the monthly weather summary. Refer to their list of temperature predictions.

Ask such questions as

- What seems to be the hottest part of the day? Why do you think so?
- Do any of your predictions seem to be right?
- Have you been able to answer any of the questions you put in the Wonder and Discover Book about temperature?
- How does this month's temperature data compare with the predictions you made?
- What do you predict the highest temperature will be next month? The lowest temperature? Record their ideas on SP 3.6B Weather Predictions.
- What do you predict the average temperature will be in the morning for next month? At noon? In the afternoon? Record their ideas on SP 3.6B Weather Predictions.

7. Review the monthly cloud data. Compare average temperatures for cloudy days and clear days.

Ask such questions as

- Were there more cumulus or stratus clouds this month?
- How did your predictions about the number of cloudy days, partly cloudy days, and clear days turn out?
- Do sunny or clear days seem to be warmer or cooler than cloudy days? Why do you think this happens?
- How does this month's cloud data compare with the predictions you made?
- Do you think there will be more or less cloudy days next month? Record their ideas on SP 3.6B Weather Predictions.

- 8. Have the students describe the weather for the month. They can do this as a class or in small groups. Record and save these monthly descriptions for comparison with future summaries.**
- 9. Have the students create or refine their working definitions for weather, wind, rainfall, temperature, and clouds and record them in the Working Dictionary. See Appendices A-C for further information on working definitions.**
- 10. Have the class record their ideas in the Connections Book.**
Ask such questions as
 - Who needs to know about weather?
 - Why is knowing about the weather important?
 - How can you use weather information?
 - Who else uses weather information? How do they use it?
- 11. Have the class describe seasonal weather conditions in the same way as described above for each month. Help them compare their seasonal descriptions. Use either locally defined seasons or the four astronomical seasons.**



MONTHLY WEATHER SUMMARY SP 3.6A
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Name: _____

Date: _____

Month: _____			
Weather Type	Number of Days	Weather Type	Number of Days
Wind Speed (Number of days)		Wind Direction (Number of days)	
0 Calm:	4 Strong Breeze:	North:	NE:
1 Slight Breeze:	5 Strong Wind:	South:	NW:
2 Gentle Breeze:	6 Wind Storm:	East:	SE:
3 Moderate Breeze:	7 Hurricane:	West:	SW:
Average:		Mostly:	
Total Rainfall:	Severe Weather Events:		
Highest Temperature:		Lowest Temperature:	
Average Morning Temperature:	Average Noon Temperature:	Average Afternoon Temperature:	
Cloud Cover (Number of Days)			
Overcast:	Partly Cloudy:	Clear:	
Other weather observations:			
Describe the weather for this month.			



**WEATHER
PREDICTIONS
SP 3.6B**

Name: _____

Date: _____

Weather predictions for: (Month)		
Most common kind of weather:		
Wind speed:	Wind direction:	
How much rainfall?		
Highest temperature:	Lowest temperature:	
Average morning temperature:	Average noon temperature:	Average afternoon temperature:
Cloudy days:	Partly cloudy days:	Clear days: