

Weather Report Chart

Levels



Grades K-4

Overview:

In this activity, students will make a classroom weather report chart and record data for four weeks.

Objectives:

The student will:

- measure temperature, precipitation, cloud cover, wind speed, and wind direction for one month;
- chart and graph weather data; and
- analyze weather data using mathematical formulas.

GLEs Addressed:

Science

- [3-4] SA1.1 The student demonstrates an understanding of the processes of science by asking questions, predicting, observing, describing, measuring, classifying, making generalizations, inferring, and communicating.
- [3] SD3.1 The student demonstrates an understanding of cycles influenced by energy from the sun and by Earth's position and motion in our solar system by using recorded weather patterns (e.g., temperature, cloud cover, or precipitation) to make reasonable predictions.

Math

- [3] S&P-2 The student demonstrates an ability to analyze data (comparing, explaining, interpreting, or justifying conclusions) by using information from a variety of displays (tallies, tables, pictographs, bar graphs, or [Venn diagrams L] (M6.1.2).

Materials:

- Demonstration thermometer*
- Weather calendar**
- Thermometer
- Tape
- Windsock
- Wind meter
- Compass (navigational)
- Scissors (Level I)
- Glue sticks (Level I)
- Colored pencils (Level II)
- Precipitation gauge
- 2 large rulers (meter or yard stick)
- STUDENT INFORMATION SHEET: "Cut and Paste Clouds"
- STUDENT WORKSHEET, Level I: "Weather Calendar"
- STUDENT WORKSHEET, Level II: "Weather Calendar"

Activity Preparation:

1. Place the demonstration thermometer and weather calendar in a place of display in the classroom.
2. Tape the rulers together to form an X. This X will be used to determine cloud cover.

Activity Procedure:

1. Explain to students that they will be taking weather measurements every day for four weeks.
2. Show students how to use the thermometer to take the temperature of the air outside and then how to set the demonstration thermometer to show the day's temperature.
3. Demonstrate how to take cloud cover measurements using the yardsticks, holding the yardsticks overhead at arm's length and counting how much of the four sections are covered with clouds. Explain that students will use the yardsticks to divide the sky into four sections. Ask students to determine whether or not there are clouds in each section.
4. Show students how to measure precipitation using the class precipitation gauge. (Note: If necessary, refer to the "Build a Precipitation Gauge" lesson, available at <http://www.arcticclimatemodeling.org/lessons/index.html> for instructions on building a precipitation gauge.) When measuring, have students round up to the nearest inch.
5. Show students how to determine wind direction and speed using the windsock (Level I) or wind meter (Level II) and compass.
6. Each day assign four students to take the various measurements. Use the ACMP Student Observation Network to verify results. [Note: This activity will work best if students complete the measurements at approximately the same time each day.]
7. As a class, determine what the weather conditions are for the day (sunny, rainy, etc.) and pick a graphic to represent the day's weather.
8. On the weather calendar, write the temperature, cloud cover (1,2,3, or 4 sections) and the precipitation. Post the weather graphic.
9. At the end of each week, have students complete the STUDENT WORKSHEET: "Weather Calendar" for that week. Level I students will complete a different graph each week. Level II students will add to a continuous graph.
10. Complete the Level I worksheets as a class. [Note: Make sure to read the instructions aloud and demonstrate as needed.] For week two, explain to students how to complete a pictograph, using the clouds on the STUDENT INFORMATION SHEET to fill the graph.
11. At the end of the month, ask Level II students to complete the "Conclusion" section of their STUDENT WORKSHEET: "Weather Calendar." Ask students if the community experienced any extreme weather during that month. If so, when? How can one tell?

Language Links:

Alaska Native people have always been careful observers of the weather. Their languages are rich in words describing weather. Ask a local Native language speaker to provide the words in the local dialect for the weather phenomenon listed in the chart below. The local dialect for these words may differ from the examples provided. Share the words with students to build fluency in local terms related to weather. Include local words in songs, stories and games when possible.

English	Yupik	Inupiaq	Local Dialect
windy	anuqligh	anubi	

Answers:

Answers will vary.

* Demonstration thermometer available at:

http://edushop.edu4kids.com/catalog/product_info.php?products_id-1458

<http://www.didax.com/shop/productdetails.cfm/ClassID/68/Sort/Item/Order?Asc/StartRow/1/Show-All/No/ItemNo/26-395.cfm>

http://wardsci.com/product.asp_Q_pm_E_IG0003282_A_Demonstration+Thermometer

** Weather calendar available at:

http://www.teachersparadise.com/c/product_info.php/products_id/1181?osCsid=109ddb020605b7f2ab935775c0b8fe2 (set includes a thermometer)

http://www.teacherstorehouse.com/product2asp?product_key=46519 (weekly calendar, not monthly)

Name: _____

Weather Calendar: Week One

Student Worksheet



For each day below, write the temperatures you recorded for the week.

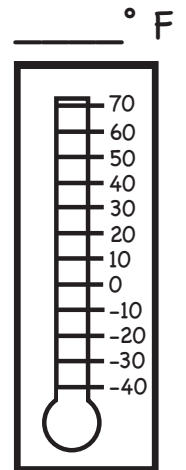
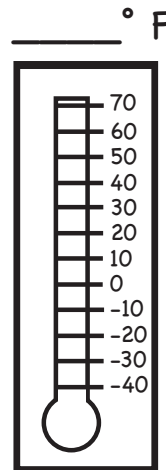
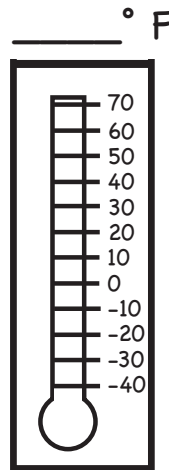
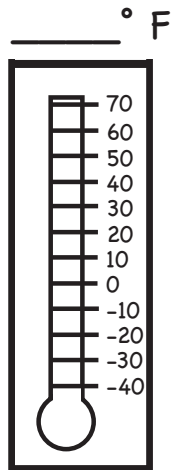
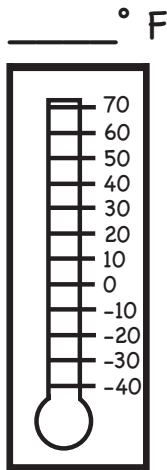
Monday

Tuesday

Wednesday

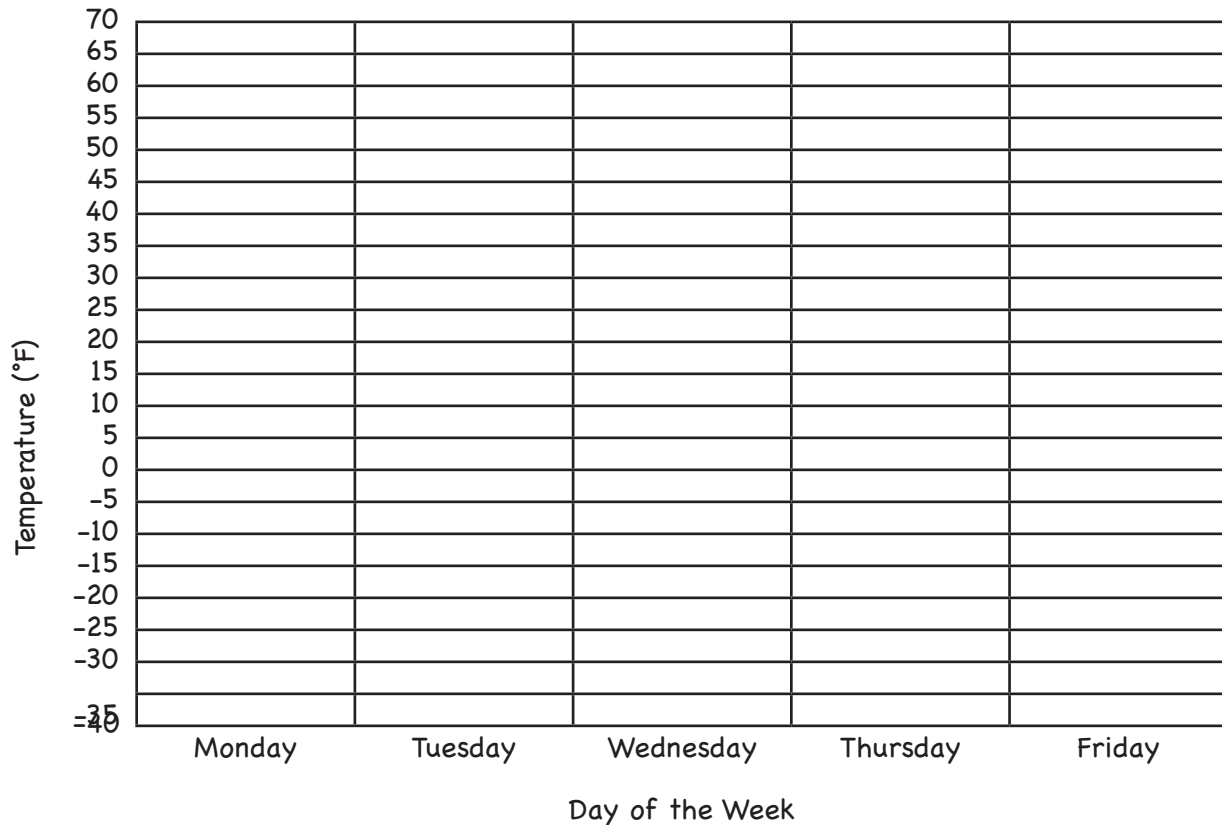
Thursday

Friday



Circle the day that was the warmest.

In the bar graph below, graph the temperatures recorded above.



Name: _____

Weather Calendar: Week Two

Student Worksheet



Each day, draw or paste a cloud in each section in which you saw clouds.

Monday	Tuesday	Wednesday												
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Thursday	Friday													
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In the chart below, paste clouds in the boxes next to each day to show how many sections you saw clouds in on each day.

Day of the Week	Monday				
	Tuesday				
	Wednesday				
	Thursday				
	Friday				
		Cloud Cover			

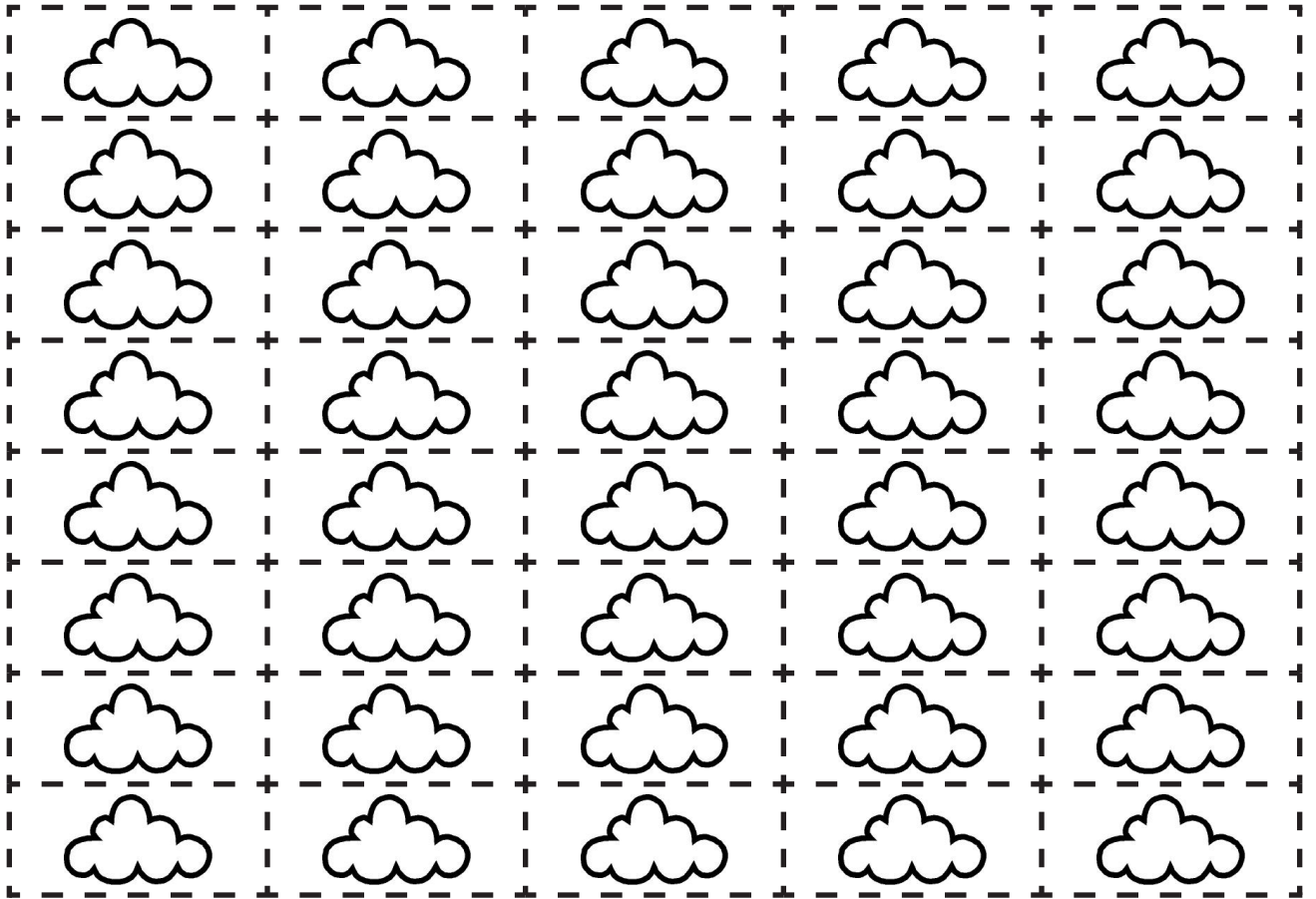
On the graph above, circle the day that had the most cloud cover.

Weather Calendar: Week Two

Cut and Paste Clouds



Cut along the dotted lines and paste clouds in the boxes to complete the "Weather Calendar: Week Two" STUDENT WORKSHEET.



Name: _____











Level



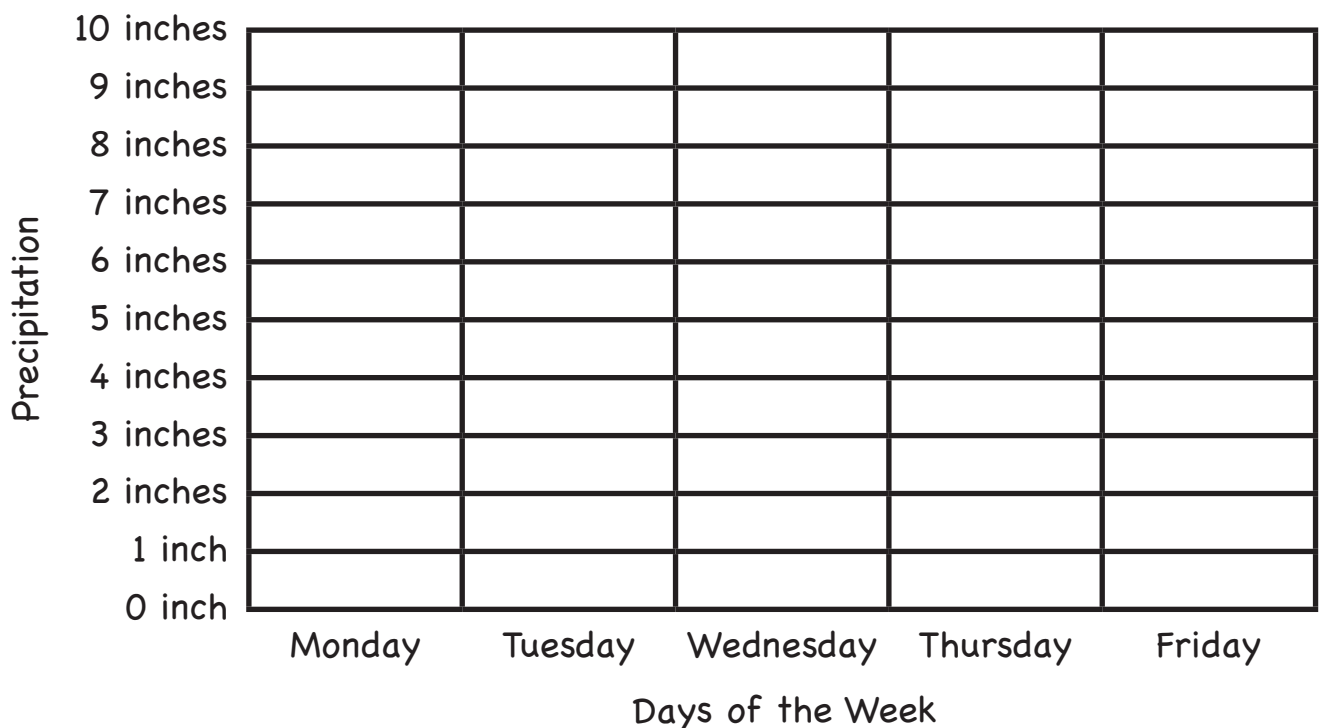
Weather Calendar: Week Three

Student Worksheet

For each day, write the amount of precipitation that fell.

Monday	 	_____ inches
Tuesday	 	_____ inches
Wednesday	 	_____ inches
Thursday	 	_____ inches
Friday	 	_____ inches

On the graph below, graph the precipitation for each day of this week.



On the graph above, circle the day that had the most precipitation.

Name: _____

Weather Calendar: Week Four

Student Worksheet



In the chart below, draw a picture representing the weather for that day.

Day	Weather
Monday	
Tuesday	
Wednesday	
Thursday	
Friday	

Name: _____

Level

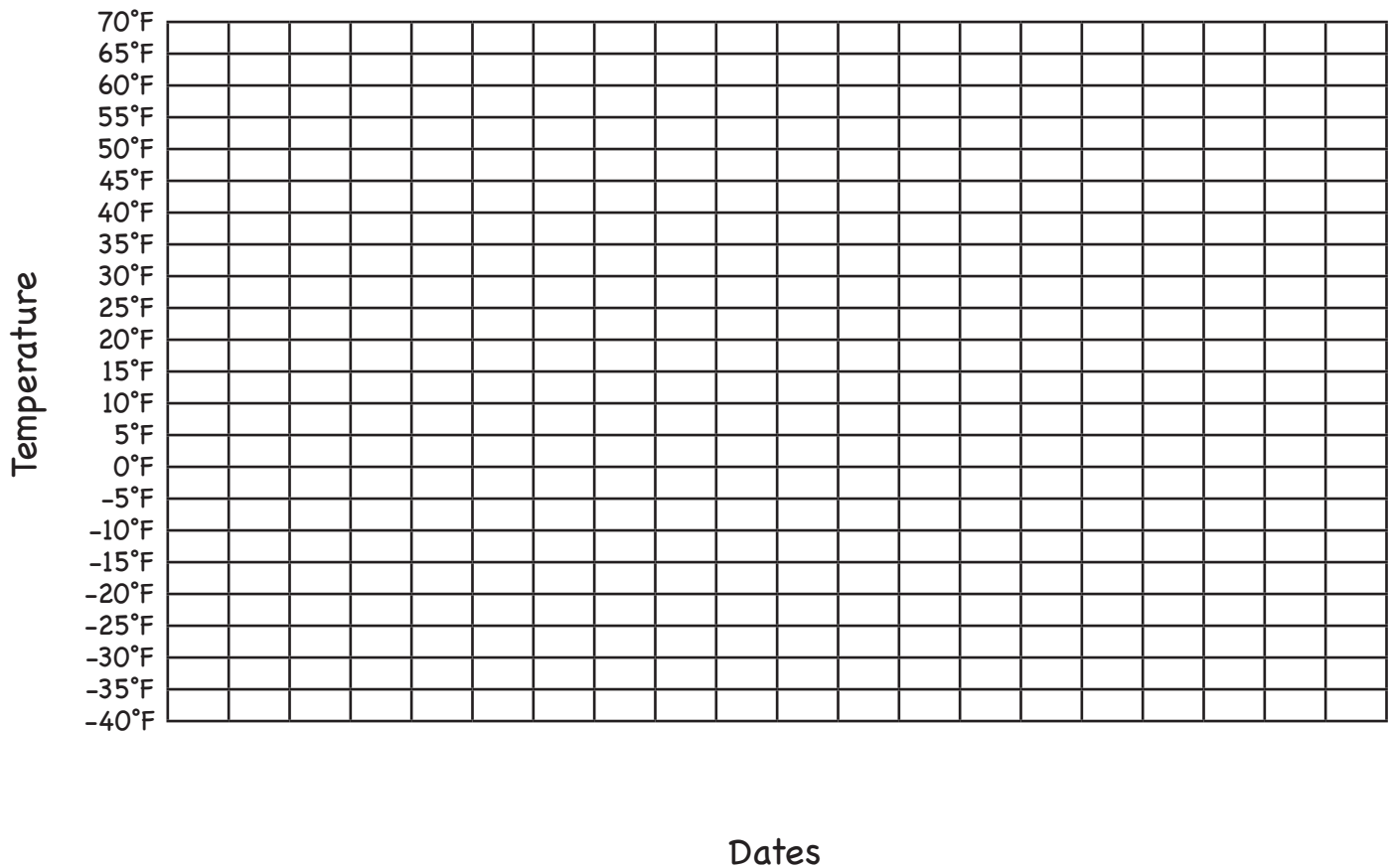
Weather Calendar: Temperature Student Worksheet



In the chart below, write the temperatures you recorded for each day.

Day	Week 1	Week 2	Week 3	Week 4
Monday	° F	° F	° F	° F
Tuesday	° F	° F	° F	° F
Wednesday	° F	° F	° F	° F
Thursday	° F	° F	° F	° F
Friday	° F	° F	° F	° F

In the bar graph below, graph the temperatures.



Name: _____

Level

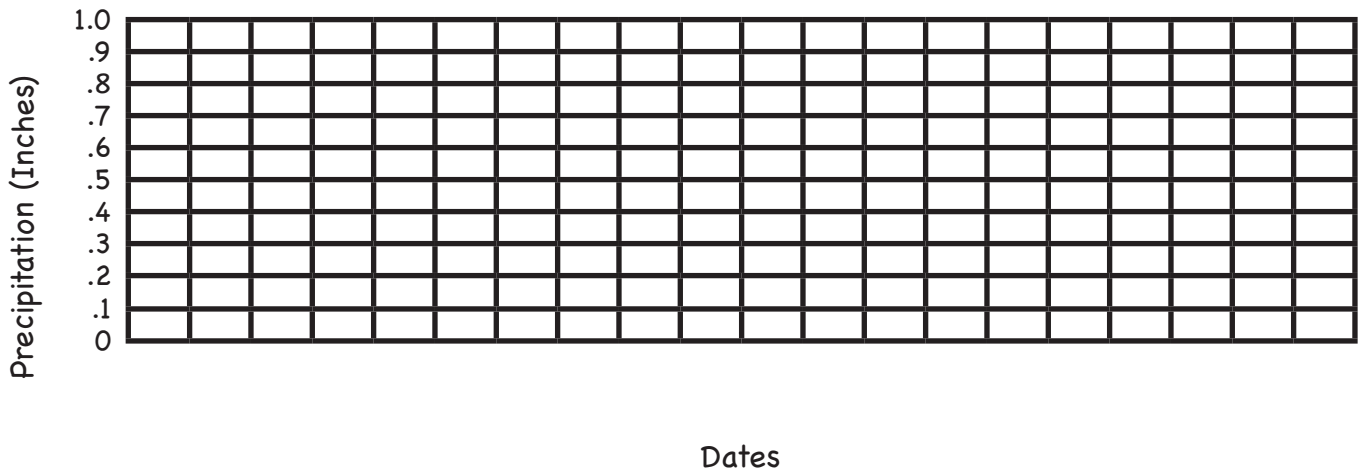
Weather Calendar: Precipitation Student Worksheet



In the chart below, write how much precipitation fell for each day.

Day	Week 1	Week 2	Week 3	Week 4
Monday	inches	inches	inches	inches
Tuesday	inches	inches	inches	inches
Wednesday	inches	inches	inches	inches
Thursday	inches	inches	inches	inches
Friday	inches	inches	inches	inches

On the bar graph below, graph the precipitation that fell for each day.



Name: _____

Level

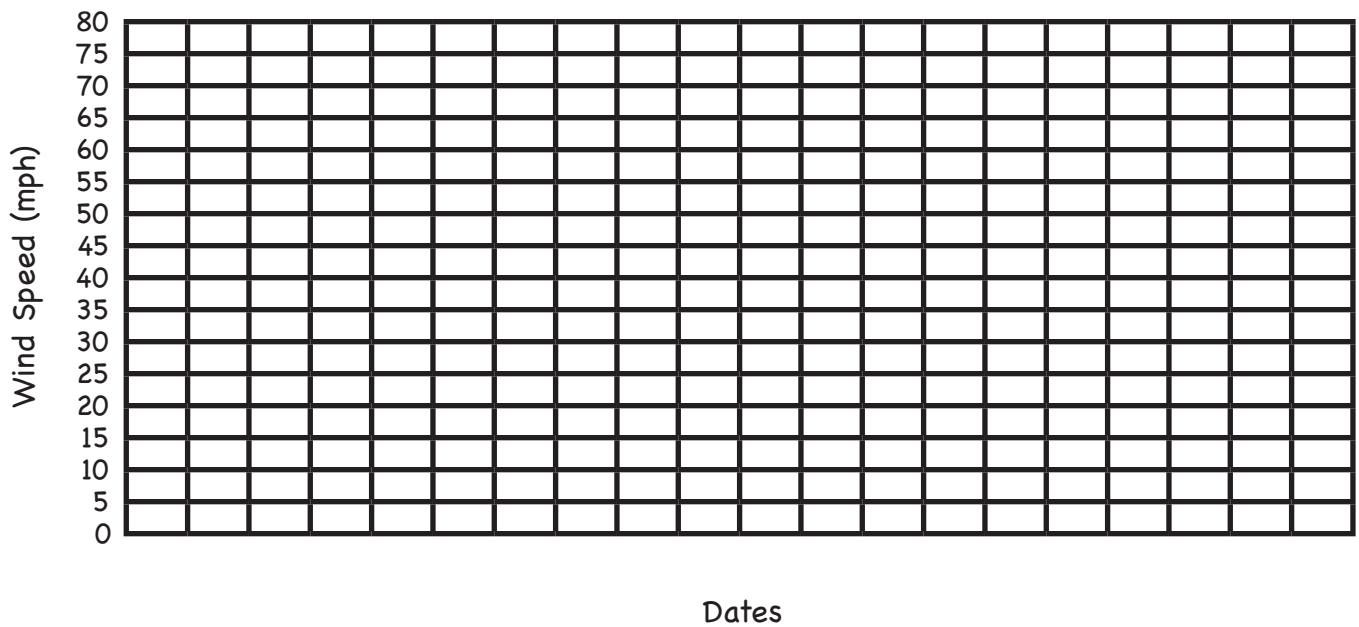
Weather Calendar: Wind Speed and Direction Student Worksheet



In the chart below, list the wind speed and direction for each day. For example, if the wind was moving at 20 mph from the northwest, write NW 20mph.

Day	Week 1	Week 2	Week 3	Week 4
Monday	mph	mph	mph	mph
Tuesday	mph	mph	mph	mph
Wednesday	mph	mph	mph	mph
Thursday	mph	mph	mph	mph
Friday	mph	mph	mph	mph

On the line graph below, graph the wind speed for each day.



Name: _____

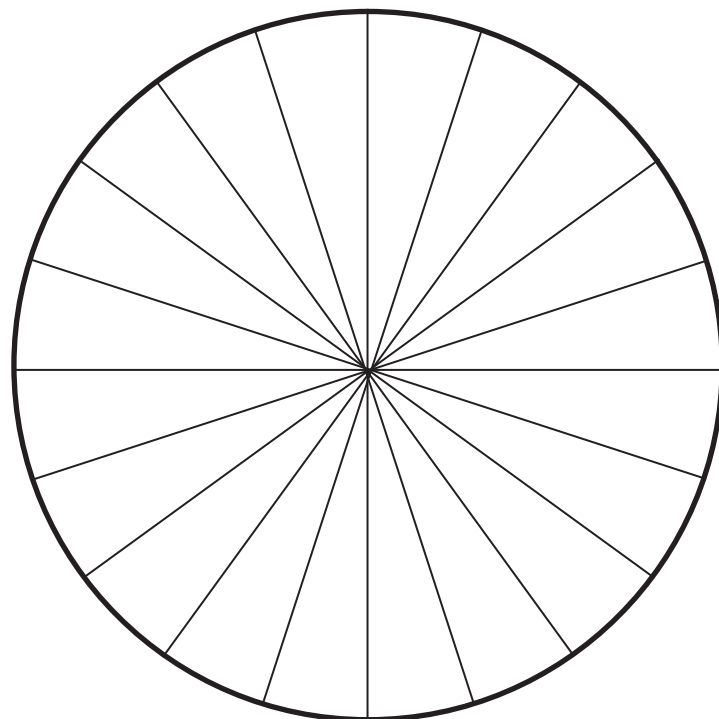
Level

Weather Calendar: Conclusion Student Worksheet



- How many days was the wind blowing from the...
a. west _____ b. east _____ c. north _____ d. south _____
- In the circle below, create a pie graph that shows wind direction for the month. For each day that the wind was blowing from a certain direction, color in a section of the pie below. Use the color key provided.

Color Key	
West	= Blue
East	= Red
North	= Green
South	= Yellow



- Which direction did the wind blow from most frequently? _____
- Which day had the highest temperature? _____ Week _____
- Which day had the lowest temperature? _____ Week _____
- Which day had the highest precipitation? _____ Week _____
- Which day had the lowest precipitation? _____ Week _____
- What was the total precipitation for the month? _____