Cloud Forecast

Overview:

During this activity, students make and record weather observations, and compare their observations to online weather data.

Objectives:

The student will:
- make and record weather observations;
- identify cloud types; and
- look up weather data online as a class.

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] SA1.2 The student demonstrates an understanding of the processes of science by observing and describing the student's own world to answer simple questions.
- [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.

How many days will be cloudy?

Weather Forecast: _____

Cloud Data Chart:

Day	Cloud Type
Monday	
Tuesday	
Wednesday	
Thursday	
Friday	

Materials:

- Scissors
- Glue sticks
- Poster board (Level 1)
- Cloud-type pictures (Level 1)
- Crayons or markers (optional: Level 1)
- STUDENT WORKSHEET: "Cloud Forecast" (Level 1)
- STUDENT LAB PACKET: "Cloud Forecast" (Level 2)
- INFORMATION SHEETS (4): "Cloud Types"

Activity Preparation:

Level 1: On a poster board, draw an enlarged copy of the Cloud Data Chart shown above. Be sure to include the information above the chart. Students will use the chart to record cloud observations this week.

Level 1 & 2: Download the cloud-cover forecast for the next week by going to the NOAA Web site (http://weather.noaa.gov/weather/AK_cc_us.html, select your city from the Forecasts, Watches and Warnings "Select a city" pull-down menu). Print the forecast. Students will use the forecast to form a hypothesis.

Activity Procedure:

1. Explain that during this activity, students will observe and record cloud cover. As a class, go to the Science Observation Network Website (http://www.ArcticClimateModeling.org/son/index.html), and select "Enter weather data or view charts and graphs."

2. Select "View Data," and look at the "One weather station" data grid for your village to see if the report has been entered for clear or overcast skies. Look outside. If there are clouds in the sky, discuss with the class the kind of cloud overhead. Use the cloud-type Information Sheets to help students identify today's cloud type. Once identified, click "Back," then "Start Over."

3. Select "Enter Data," then log in. Select the type of cloud students identified in the sky to update today's cloud data on the Website, and click "Submit Weather." Has today's cloud type changed?

4. Ask if students have heard or seen a weather forecast this week. Explain that scientist predictions of cloudiness and other weather are called forecasts.

5. **Level 2:** Distribute lab packets and discuss Background Info.

6. Share the printed cloud forecast with students. **Level 1:** Record the forecast on the large Data Chart. **Level 2:** Ask students to record the forecast in the Hypothesis section of their lab packet.

7. **Level 1:** Each day for a week, ask students to look at the cloud-type pictures to identify clouds in the sky. Cut out a cloud picture (or clear sky picture) that represents the type of clouds in the sky and glue or tape it in the box next to the correct day on the class Cloud Data Chart.

   Level 2: Each day for a week, ask students to look at the sky and identify what type of clouds can be seen. Ask students to cut out the matching cloud picture and glue it in the box next to the correct day. If there are no clouds in the sky, students should cut out a "clear sky" picture and glue it in the box.

8. On Friday, help students analyze their data. What types of cloud cover did they observe this week. How many days did they observe each type? Ask Level 2 students to complete the Data Analysis section of their lab packet.

9. Help students count the cloudy days on their chart to find their conclusion. Level 1: Distribute student worksheets and ask students to circle one cloud on the worksheet for each cloudy day this week. Level 2: Ask students to complete the Conclusion section of their lab packet.
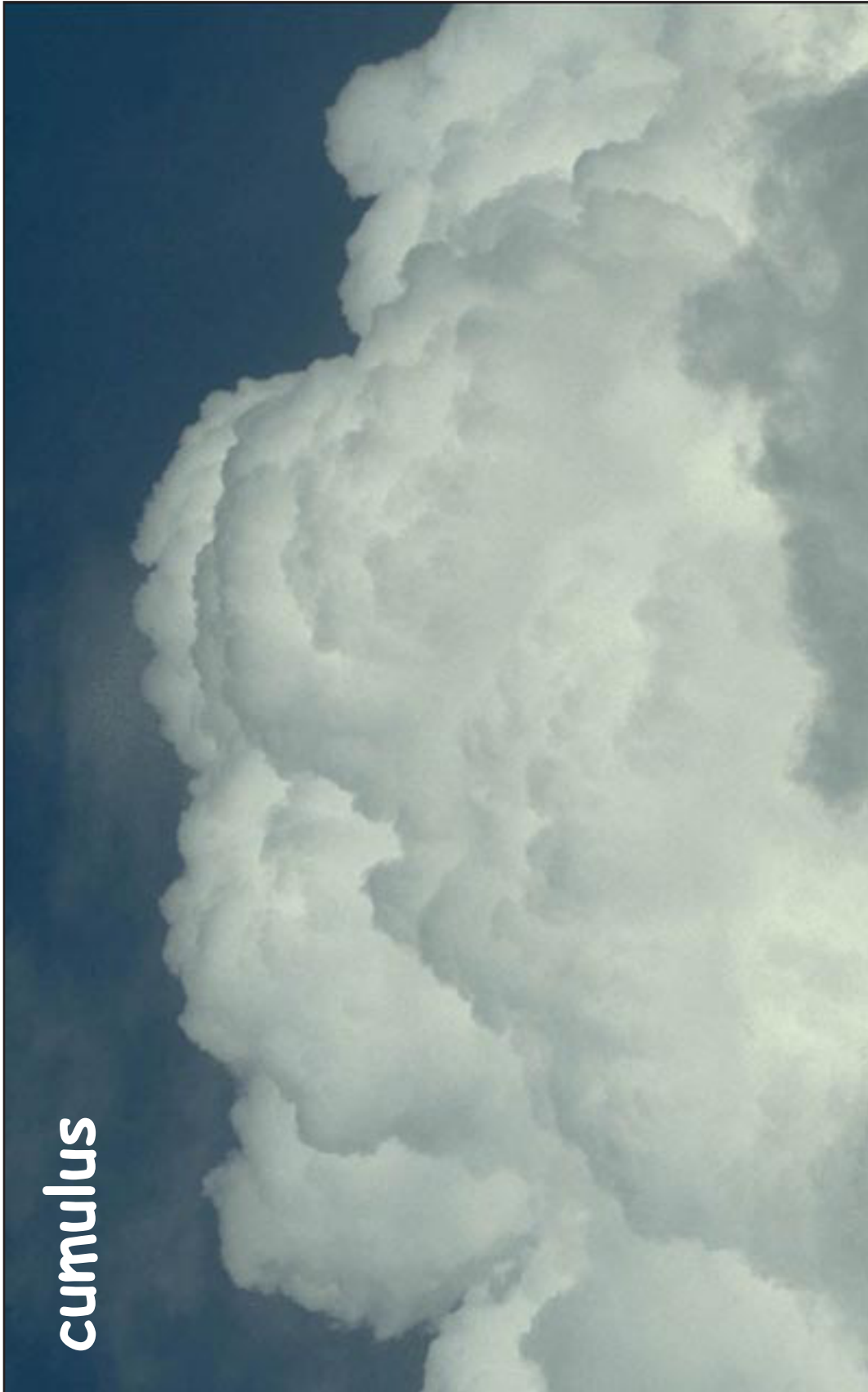

Answers to Student Questions:

Level 1: Answers will vary, but the number of clouds drawn should match the number of days that cloud cover was recorded on the Cloud Data Chart.

Level 2: Answers will vary, but all sections should be complete and conclusion should reflect chart data.

cirrus

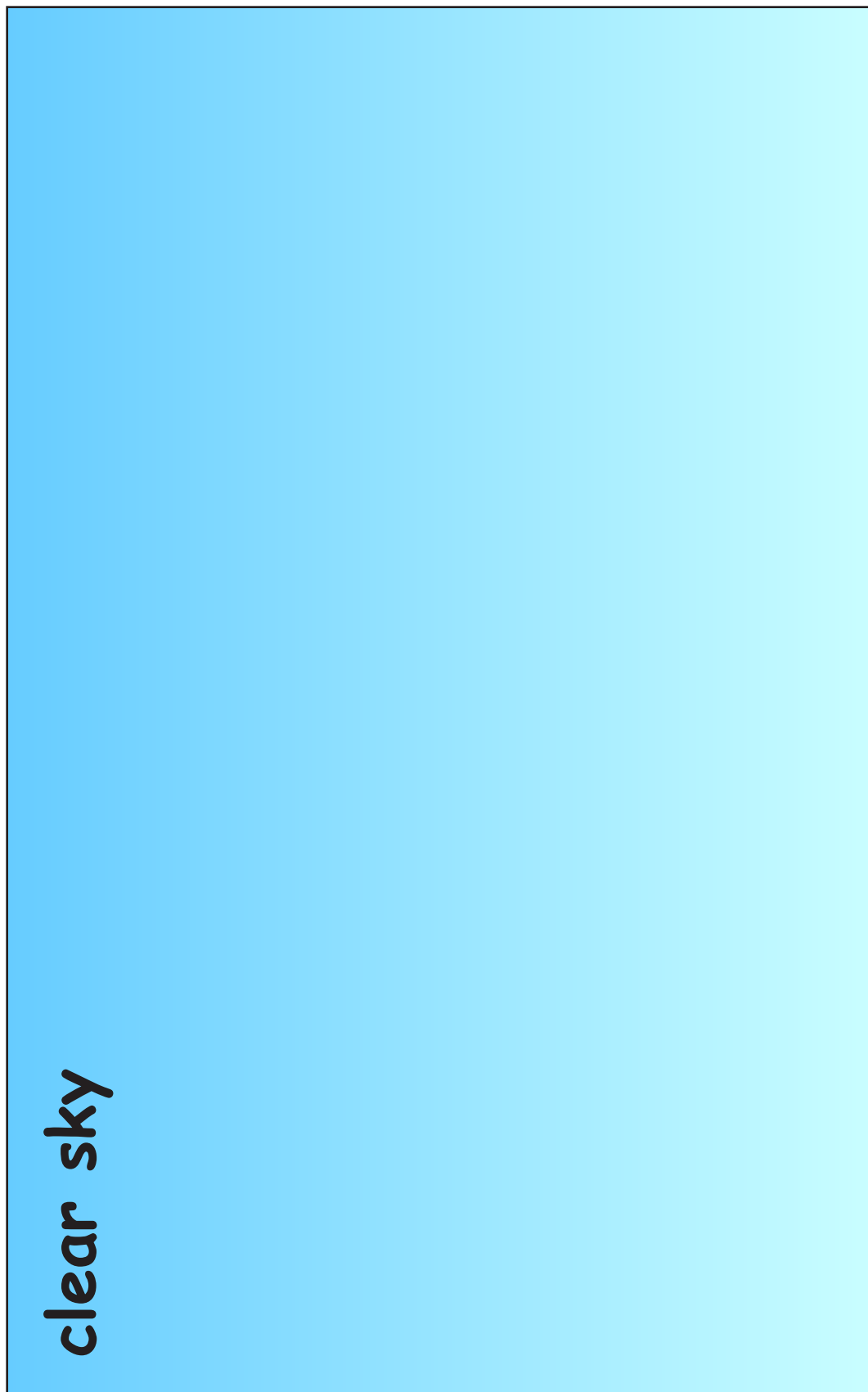Use this picture to complete the classroom Cloud Data Chart.

cumulus

Use this picture to complete the classroom Cloud Data Chart.

stratus

Use this picture to complete the classroom Cloud Data Chart.

clear sky

Use this picture to complete the classroom Cloud Data Chart.

Name:_____

Cloud Forecast
Student Worksheet

How many days was the sky cloudy this week? Look at the classroom Cloud Data Chart to find the answer, then circle that number of clouds below.

Name:_____

Cloud Forecast

Level

II

Testable Question:

How many days will be cloudy this week?

Background Information:

Discuss with your classmates the following: What is a cloud? Do clouds always look fluffy? Describe the way different types of clouds look. Do clouds move or change during the day?

Hypothesis (or Guess):

As a class, look at the daytime weather forecasts for this week provided by your teacher. How many days do scientists expect clouds over your area this week?

_____ days

Experiment:

Materials:

- Scissors
- Glue sticks
- Cloud data charts
- Cloud-type pictures

Procedure:

1. At the same time each day for a week, look at the clouds in the sky.

2. Identify what type of clouds can be seen and cut out the matching cloud picture.

3. Glue the picture in the box next to the correct day on the Cloud Data Chart.

   If there are no clouds in the sky, cut out a "clear sky" picture and glue it in the box.

Name:_____

Cloud Forecast
Student Lab Packet (page 2 of 4)

Cloud Data Chart:

Day	Cloud Type
Monday	Paste a picture of the type of cloud you see in the sky here.
Tuesday	
Wednesday	
Thursday	
Friday	

Cloud pictures to complete this chart can be found on the following page.

Name:_____

Cloud Forecast
Student Lab Packet (page 3 of 4)

Cut out ONLY the cloud type you see in the sky and paste it next to the correct day on the Cloud Data Chart.

Cirrus	Cirrus	Cirrus	Cirrus	Cirrus
Cumulus	Cumulus	Cumulus	Cumulus	Cumulus
Stratus	Stratus	Stratus	Stratus	Stratus
Clear Sky	Clear Sky	Clear Sky	Clear Sky	Clear Sky

Cloud Forecast
Student Lab Packet (page 4 of 4)

Data Analysis:

How many days this week did you observe each type of cloud cover?

Cirrus   _____

Stratus   _____

Cumulus   _____

Clear Sky   _____

Conclusion:

How many days were cloudy this week? _____

Was the scientists' forecast from early this week correct? Explain how you know.

_____

_____

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