Cloud Fun

Purpose

- To help students identify cumulus clouds and observe the weather conditions on days that they see cumulus clouds in the sky.

Overview

Students will make observations of cumulus clouds in the sky, and will also observe the weather conditions on the day these clouds are observed. Then students will create a cumulus cloud out of paper and share these with their class.

Student Outcomes

After reading and/or listening to the *Elementary GLOBE* book *Do You Know That Clouds Have Names?* and completing this activity, students will learn about a cumulus cloud's shape and appearance, how to describe cumulus clouds with words and pictures, and what kind of weather is generally happening when these clouds are in the sky.

Next Generation Science Standards
- DCI ESS-2C: The Roles of Water in Earth's Surface Processes
- Science Practice 6 Constructing Explanations
- Science Practice 8 Obtaining, Evaluating, and Communicating Information
- Crosscutting Concept 1 Patterns

CCSS.ELA Anchor Standards
- W.4 Produce clear and coherant writing...

Time

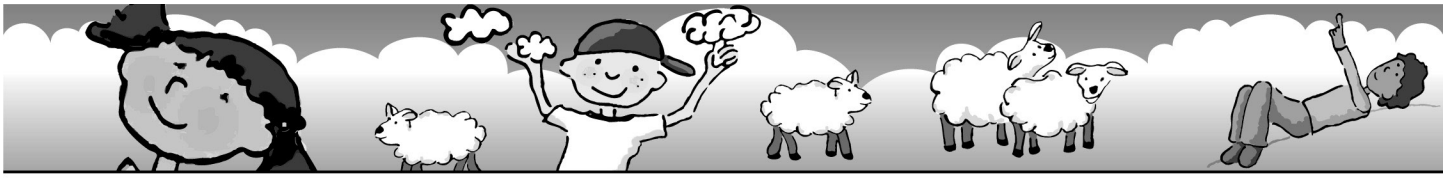
- One 45- to 60-minute class period

Level

K-4 (most appropriate for grades K-2)

Materials

- *Elementary GLOBE* storybook: *Do You Know That Clouds Have Names?*
- GLOBE Cloud Chart (globe.gov/globecloudchart)
- Chart paper
- Newspaper (for protection of the activity tabletop)
- Sheets of white construction paper
- Larger pieces of blue construction paper
- Glue or glue sticks
- Markers or pencils
- Template or stencils (optional)
- *Cloud Fun Student Activity Sheet*



Preparation

- Read the *Elementary GLOBE* storybook *Do You Know That Clouds Have Names?* – either read it to the class or have students read it to themselves. The book can be downloaded from www.globe.gov/elementaryglobe.
- Organize table(s) with the art materials listed above.
- Make a chart with the title: "Cumulus Clouds Look..." placed on a bulletin board.

Teacher's Notes

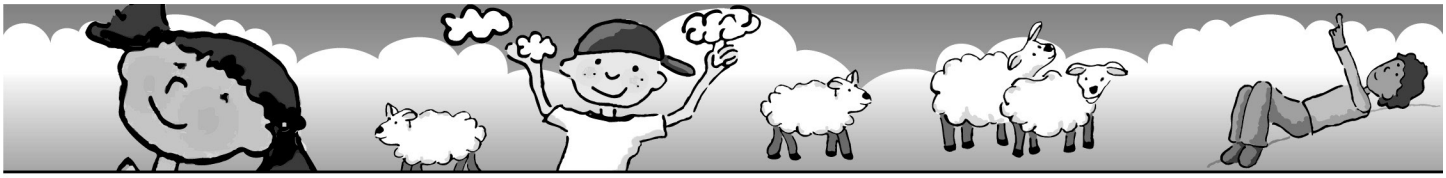
Clouds take many different forms. There are three main groups of clouds: cumulus, stratus, and cirrus. They can be remembered by the descriptions given to them. Cumulus clouds are heaped and puffy. They have also been described as looking like cotton balls and/or cauliflower. Stratus clouds are long and stretch themselves across the sky in lengthy, horizontal layers. Cirrus clouds are seen high in the sky and are very thin. They are often referred to as "mare's tails" in the sky. Clouds affect our weather and climate, and the following list includes information on the weather associated with the different types of clouds:

- **Cumulus** – Cumulus clouds can be associated with good or bad weather. Some show up on warm summer days and are associated with fair weather.
- **Stratus** – Usually precipitation doesn't fall from stratus clouds, but sometimes they may produce drizzle.
- **Stratocumulus** – Precipitation is not associated with these clouds.
- **Altostratus** – Altostratus clouds often form ahead of storms that may produce continuous precipitation.
- **Altocumulus** – The appearance of these clouds on a warm, humid summer morning often means thunderstorms may occur by late afternoon.
- **Cirrus** – Cirrus clouds generally indicate fair to pleasant weather.
- **Cirrostratus** – Cirrostratus clouds usually come 12-24 hours before a rain or snowstorm.
- **Cirrocumulus** – Cirrocumulus clouds are usually seen in the wintertime and indicate fair, cold weather.
- **Nimbostratus** – Nimbostratus clouds are associated with continuously falling rain or snow. They produce precipitation that is light to moderate.
- **Cumulonimbus** – Rain, snow, hail, lightning, thunder, and even violent tornadoes are associated with cumulonimbus clouds.

Refer to the Atmosphere Investigation chapter of the *GLOBE Teacher's Guide*, as well as the Teacher's Notes section of *Do You Know That Clouds Have Names?*, for more information on clouds (www.globe.gov).

What To Do and How To Do It

1. Pick a day that has cumulus clouds in the sky.
2. Explain to the students that they will be going outside to observe cumulus clouds in the sky.
3. Go outside and look up at the clouds. Do this standing up, sitting down, and laying on the ground to get different perspectives of the sky. Ask students to think of words that describe the clouds' appearance. Ask the students to use their five senses to describe the weather they are experiencing.
4. Go back inside and show your students the GLOBE Cloud Chart and the Elementary GLOBE storybook *Do You Know That Clouds Have Names?* Point out cumulus clouds and show students how they look different from the other clouds. Discuss some words to describe how a cumulus cloud looks (e.g. big, fluffy, like a cotton ball, like cotton candy, etc.).
5. Have the students share the words that they would use to describe the clouds as the teacher records their findings on a piece of chart paper titled: "Cumulus Clouds Look..."



6. After the chart has been completed, give each student a piece of white construction paper. Ask him/her to tear it into a large free-form cloud based on observations made of clouds outside. Glue the cloud onto blue paper.

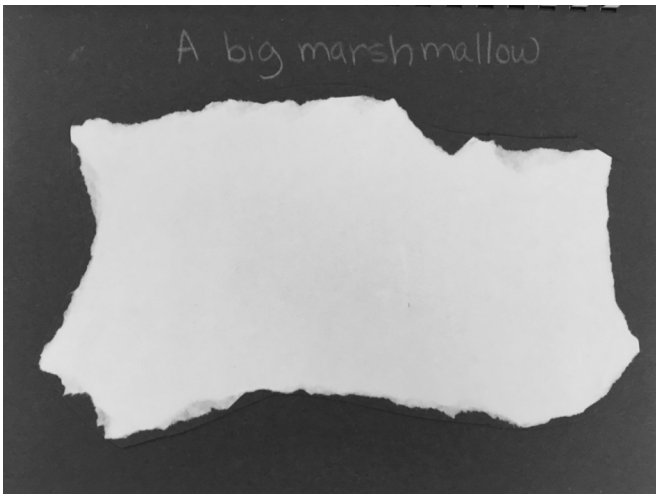


Figure 1. Example of a student-made cloud with the description that it looks like a big marshmallow

7. After the students have completed their cumulus cloud formations, gather again as a large group. Discuss the connection between clouds and weather. Have the students describe what kind of weather they were experiencing while they were outside observing the clouds. Help them categorize their thoughts by referring to their five senses. What did they feel, see, taste, hear, or smell that pertains to the weather they experienced outside? Was it hot, cold, windy, cloudy, breezy, cool, wet, gray, etc.? Make a list of these words on a chart and title it "Weather Words."
8. Next, have each student complete the *Cloud Fun Student Activity Sheet*, using the charts made by the class as references. Attach the completed activity sheets to their cloud and display in the classroom. This activity could also be assembled into a class book for your classroom's reading center or for a bulletin board.

Adaptations for Younger and Older Students

If tearing the paper is too difficult have the students trace around a cloud template and then cut out their shape. Depending on the age of the students, a cardboard cloud template to trace around will work well, or make a cloud stencil so they can trace on the inside to make their creation.

Further Investigations

- **Cloud Word Wall:** Generate a list of words students might use to describe clouds. This list should include adjectives that describe the appearance of different cloud types. Also include words that apply to the different senses. Your students can help you generate the list. Keep the list up on the wall while you are doing the *Elementary GLOBE* cloud activities so students can refer to it; it will help them think of words to use on their student activity sheets.
- **Other Cloud Types:** Do the same activity, and this time pick another cloud type to observe and create. Choose a cloud that is common where you live.
- **Cloud Journal:** Have students keep a cloud journal for a week. Each day, have them go outside and observe the clouds. Next, have them draw the kinds of clouds they saw and report on what the weather was for that day. Review the results at the end of the week. Was there a pattern to the kinds of clouds they observed? Were there any connections between the weather and the kinds of clouds they observed? Did they need to use different colors to record the cloud pictures?
- **GLOBE Cloud Protocol:** Start making cloud observations as a class to submit to GLOBE. See the *GLOBE Teacher's Guide* (www.globe.gov) for more information on the Cloud Protocol. Also, see the *GLOBE Observer Clouds App* (observer.globe.gov), which guides students through the process of taking cloud observations using a smartphone or tablet.

Diversión con nubes: hoja de trabajo

¡Encontré un cúmulo!

Nombre _____

Fecha _____

Mi cúmulo se parece a _____

_____

Cuando observé esta nube, el tiempo estaba:

- ☐ caluroso
- ☐ cálido
- ☐ fresco
- ☐ frío
- ☐ lluvioso
- ☐ nevoso
- ☐ ventoso
- ☐ tranquilo
- ☐ muy nublado
- ☐ un poco nublado

Haz un dibujo de la nube y del estado del tiempo cuando la observaste.