



Cloudscape

Learners will construct a sky scene with trees and buildings as reference points on the ground and cloud types ordered by altitude in the sky. Learners will describe clouds in their own words and will then correlate their descriptions with the standard classifications of cloud types used by GLOBE.

Purpose

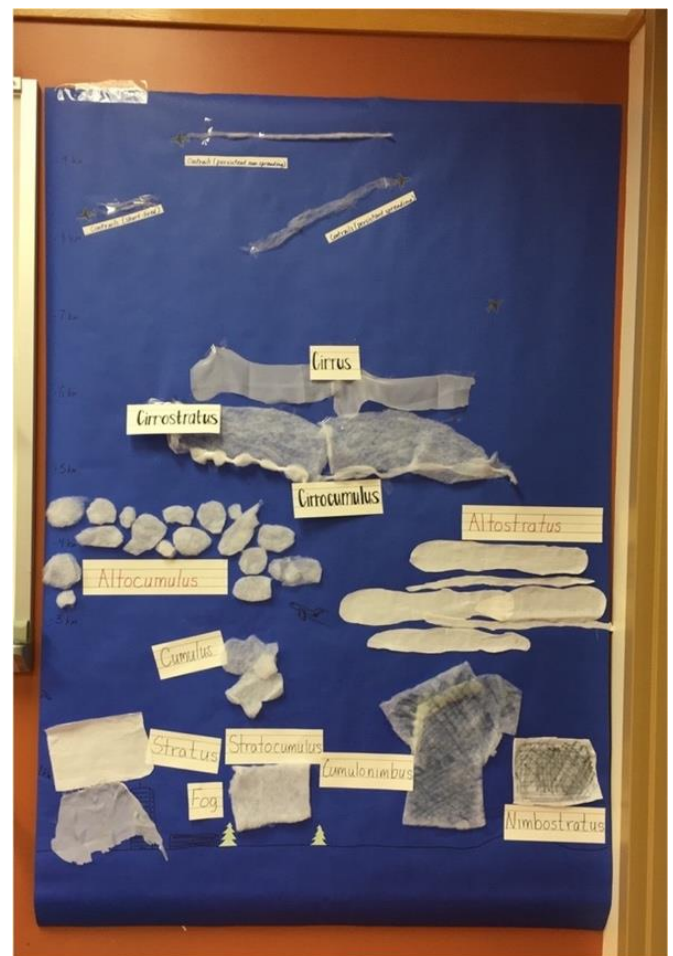
- To help learners identify some of the characteristics of clouds
- To enable learners to observe clouds, describe them in their own words, and compare their descriptions with the official cloud names

Time

60 Minutes

Materials

- [GLOBE Cloud Identification Chart](#)
- [Do You Know That Clouds Have Names? Elementary GLOBE Book](#)
- Cloudscape Student Activity Sheet (included below)
- Large sheet of blue paper or poster board
- Cotton balls or cotton pillow batting (buy the kind that is sold by the yard), wax paper, torn white sheets, sheer white fabric
- Yellow and white strips of paper (large enough to write the names of the clouds)
- Crayons or markers (especially black and gray)
- White chalk
- Glue sticks
- Scissors
- Rulers



Safety

Instructors should ensure that all tools and materials are used appropriately and safely (scissors, glue, etc.).

What to Do

Preparation

1. Read the Elementary GLOBE storybook [Do You Know That Clouds Have Names?](#)
2. Make examples of the different types of clouds with the same materials the learners will use. Having visual examples will help the learners with this activity.

Activity

1. On a wall or a bulletin board, construct a sky scene (like a mural) with the group using a poster board or a roll of paper. Be sure to include buildings and trees that are to scale at the bottom of the scene to provide a sense of horizon. This will serve as a reference to decide if the clouds are low, high, or someplace in between. On one side of the scene, label the different altitudes in the sky, from 0 meters to 8,000+ meters. For younger learners, also add the words “Low”, “Middle”, and “High” by the altitudes.
2. Divide the learners into groups (if you divide them into 11 groups, each group will complete one cloud type or contrails for the wall; otherwise, you can divide them into fewer groups and have each group do more than one cloud type). Assign each group a cloud type(s). Share examples of different clouds made by the instructor.
3. Explain to the learners what they need to do for each section of the Cloudscape Activity Sheet. They should use their own words to describe their cloud in each category:
 - a. Color: white, milky, gray, silvery, mixed, black, etc.
 - b. Height in sky: low, medium, high
 - c. Size: small, large, heavy, light, dense, thick, etc.
 - d. Shape: patchy, fluffy, thin, thick, flat, etc.
 - e. Other features: lets sunlight through, blocks sunlight, covers the whole sky, is in layers, is moving, etc.
 - f. One-word description: thunderclouds, menacing, threatening, gloomy, enveloping, beautiful, streaked, foggy, bubbly, scattered, moving, swirling, scary, etc.
4. Once the learners have completed their description, have them write the name of their cloud on the white label and the one-word description for their cloud type on the yellow label. Then, have them construct their cloud out of sections of cotton balls (or cotton pillow batting). If their cloud isn't just white in color, they can use washable gray or black markers to shade the cloud.
5. Once all groups have completed these tasks, have each group make a short presentation describing their cloud type and then have them place their cotton cloud and its labels on the sky scene.

6. Keep the sky scene up so you can use it as a resource every day when making cloud observations.

Questions for Review

1. Can you name one cloud that is found low in the sky, one cloud that is found in middle altitudes, and one cloud that is found high in the sky?
2. When you hear the word “nimbus,” what immediately comes to mind?
3. What is a human-made cirrus cloud called? What causes it?

Key Words

Low Altitude

Stratus: A low cloud that looks like a gray blanket covering the sky

Stratocumulus: Low, gray, puffy clouds that can cover lots of the sky

Cumulus: A low cloud that looks like big puffy cotton balls or cauliflower

Middle Altitude

Altostratus: Gray or blue-gray middle level clouds made up of ice crystals or water droplets

Alto cumulus: Middle-level clouds made of water droplets or ice crystals and appear as white to gray puffy masses

High Altitude

Cirrus: High clouds that look feathery or like horse tails floating in the sky

Cirrocumulus: High cloud that looks like ripples on the water

Cirrostratus: High cloud that looks like a thin veil covering most of the sky

Contrail: A trail of moisture left behind when an airplane flies overhead

Clouds that Produce Precipitation

These clouds can be found at low, medium, and high altitudes.

Cumulonimbus: Thunderstorm clouds that form if cumulus clouds continue to grow vertically

Nimbostratus: Looks like a big blanket that covers the sky with continuously falling rain or snow

Other

Precipitation: Rain, snow, sleet, or hail that falls to the ground

Modifications and Extensions

- Younger learners can act out the traits of the different cloud types. Provide fabric, cotton, gauze, and other props for the learners to use. Younger learners might like to make individual clouds on their own small pieces of blue paper. They can add them to the class cloudscape or bring them home.
- Older learners can correlate cloud types with the appearance of certain types of weather. See the [Cloud Watch Learning Activity](#) in the GLOBE Teacher's Guide. Learners can also pay attention to the sequence of cloud types over the course of several days and investigate the factors that cause clouds to form.
- [GLOBE Cloud Protocol](#): Start making cloud observations as a class to submit to GLOBE. See the [GLOBE Teacher's Guide](#) for more information on the Cloud Protocols, formulating a research question, and collecting cloud data. Alternatively, you can use the Clouds tool in the [GLOBE Observer App](#) to help learners collect cloud data.

Acknowledgements

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Cloudscape Activity Sheet

Cloud Features

Color _____

My cloud is Low Middle High

Size _____

Shape _____

Other features _____

My cloud looks like this!

One word that describes my cloud is...