

Clouds as Art: Torn Paper Landscape

Levels



Grades K-4

Overview:

During this activity, students create a torn paper landscape including a sky, mountain range and small hills or flatlands. This landscape will be used for future cloud activities.

Objectives:

The student will create a torn paper landscape to be used as a background for a later project about cloud types.

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] SD1.2 The student demonstrates an understanding of geochemical cycles by describing the water cycle to show that water circulates through the crust, oceans, and atmosphere of Earth.

Whole Picture:

Clouds are formed when water on Earth evaporates and forms water vapor held in the air. As warm air rises, cooling occurs. The cooler the air, the smaller the amount of water vapor it can hold, therefore some of the water vapor is forced to condense onto tiny particles (dust, pollution) floating in the atmosphere. A small drop of water forms around each particle. A cloud is a visible mass of such water in the form of small droplets or ice crystals that are small enough to stay suspended in the atmosphere.

Clouds appear white because water droplets and ice crystals reflect sunlight. Light is composed of a spectrum of colors that, when added together, appear white to the human eye. Clouds appear gray when the droplets begin to crowd together so that sunlight cannot pass through. This can also be an indication the cloud is becoming oversaturated and may produce rain, snow, or hail.

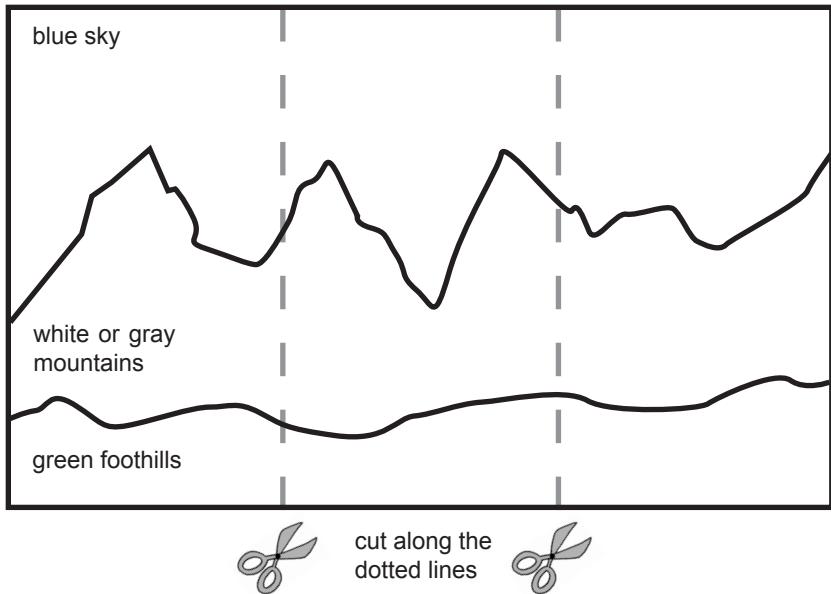
Clouds can be categorized into three basic types: cirrus, cumulus, and stratus. See lesson expansion for further details.

Materials:

- 12" x 18" blue construction paper (for sky)
- 12" x 18" white construction paper (for mountains)
- 12" x 18" green construction paper (for foothills/flatlands)
- Glue sticks

Activity Procedure:

1. Make a sample torn paper landscape using blue paper for the background, which represents the sky. Tear jagged steep triangles from the top edge of the paper to represent clouds.



gles from white paper for mountains and glue them to the blue paper. There should be some blue sky above even the highest mountains. Teacher Note: If young students are unable to tear jagged mountains out of one long sheet, give them smaller white sheets to tear into triangles. The triangles can be overlapped and glued to the blue background to form a chain of mountains.

2. Tear gently sloping hills or a straight line from the green paper, representing foothills or flatlands, and glue the flatlands in front of the mountains.
3. Show students how to create similar landscapes.
4. Cut student landscapes into thirds so that each student has three landscapes. Make sure each landscape includes flatlands, mountains and sky. Use each third for a different type of cloud illustration in the following activities.

Clouds as Art: Cirrus Clouds

Levels



Overview:

During this lesson, students create artwork illustrating cirrus clouds.

Grades K-4

Objectives:

The student will:

- learn characteristics of cirrus clouds; and
- create artwork illustrating cirrus clouds.

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] SD1.2 The student demonstrates an understanding of geochemical cycles by describing the water cycle to show that water circulates through the crust, oceans, and atmosphere of Earth.

Whole Picture:

Cirrus clouds are characterized by thin, wispy strands that appear high in the sky – generally between 20,000 and 40,000 feet (6 to 12 kilometers), but may be even higher. This is the equivalent of several miles, as one mile equals 5,280 ft. Here the water droplets freeze and form ice crystals. High winds blow the clouds into long streamers thin enough for sunlight and moonlight to pass through. Airplanes traveling at such heights leave condensation trails that can turn into cirrus clouds. A thickening, or abundance, of cirrus clouds can be an indication of an approaching frontal system. In Latin cirrus means “curl of hair.”

Materials:

- Spiderweb cotton (as used at Halloween)
- Glue sticks
- One third of landscape created during the “Clouds as Art: Torn Paper Landscape” activity
- Pictures of cirrus clouds (downloaded from the ACMP Web site)

Activity Procedure:

1. Go to the ACMP Web site, at www.ArcticClimateModeling.org, and click on “Tools and Data” to download and print cirrus cloud pictures for the lesson.
2. Explain that clouds hold water in the atmosphere, or sky above Earth. When clouds release water, it falls to Earth as rain or snow. Explain that cirrus clouds are wispy white clouds that are made of ice crystals. They are found very high above Earth (as high as ten miles).
3. Show students the sample pictures of cirrus clouds.
4. Distribute spiderweb cotton, glue sticks and landscape backgrounds.
5. Instruct students to pull pieces of spiderweb cotton into thin wisps, then glue them to the sky section on one of the three pieces of torn paper landscape. Cirrus clouds should not touch mountaintops, since they are located so far above Earth’s surface.
6. Have students label their artwork “Cirrus.”

Clouds as Art: Cumulus Clouds

Levels



Grades K-4

Overview:

During this lesson, students create artwork illustrating cumulus clouds.

Objectives:

The student will:

- learn characteristics of cumulus clouds; and
- create artwork illustrating cumulus clouds.

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] SD1.2 The student demonstrates an understanding of geochemical cycles by describing the water cycle to show that water circulates through the crust, oceans, and atmosphere of Earth.

Whole Picture:

Cumulus clouds are characterized by puffy, billowing towers of white that can extend for thousands of feet, usually beginning with flat bases ranging from 4,000 to 8,000 feet (1.2 to 2.5 kilometers) in altitude. Such clouds are formed when warm, moist air rises. As it rises, the air cools and condensation occurs. The size of a cumulus cloud depends on the force of the upward movement of the air and the amount of moisture in the air.

The presence of cumulus clouds indicates fair weather; however, when such clouds continue to grow larger and taller, forming cumulonimbus clouds, they can produce heavy rain, lightning, winds, hail, and even tornadoes. In Latin, cumulus means "heap."

Materials:

- Cotton balls
- White glue
- One third of the landscape created during the "Clouds as Art: Torn Paper Landscape" activity
- Pictures of cumulus clouds (downloaded from the ACMP Web site)

Activity Procedure:

1. Go to the ACMP Web site, at www.ArcticClimateModeling.org, and click on "Tools and Data" to download and print cumulus cloud pictures for the lesson.
2. Explain that clouds hold water in the atmosphere, or sky above Earth. When clouds release water, it falls to Earth as rain or snow. Explain that cumulus clouds are fluffy white clouds. The bases of cumulus clouds are found lower in the atmosphere than cirrus clouds. They grow upward and increase in number and size during afternoon warmth.
3. Show students the sample pictures of cumulus clouds.
4. Distribute cotton balls, glue and one piece of the landscape background.
5. Instruct students to glue cotton balls together in a group to form a cumulus cloud on one of the three pieces of torn paper landscape. Cumulus clouds can overlap mountaintops, but should not touch the flatlands.
6. Have students label their artwork "Cumulus."

Clouds as Art: Stratus Clouds

Levels



Grades K-4

Overview:

During this lesson, students create artwork illustrating stratus clouds.

Objectives:

The student will:

- learn characteristics of stratus clouds; and
- create artwork illustrating stratus clouds.

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] SD1.2 The student demonstrates an understanding of geochemical cycles by describing the water cycle to show that water circulates through the crust, oceans, and atmosphere of Earth.

Whole Picture:

Stratus clouds are characterized by their uniform look, blanketing the sky with white and gray. Such clouds are often formed when a layer of warm, moist air passes over a layer of cool air. As the two layers meet, the warm air cools to the point of condensation, forming a blanket-like cloud. These flat, featureless clouds are low in altitude (usually 2,000 to 7,000 feet or 2 to .5 kilometers) and obscure the sun.

Stratus clouds can reach the ground. When this happens these clouds are called fog. Above-ground, stratus clouds may bring light mist, drizzle, or light snow. In Latin, stratus means “layer.”

Materials:

- Quilt batting
- White glue
- Scissors
- One third of the landscape created during the “Clouds as Art: Torn Paper Landscape” activity
- Pictures of stratus clouds (downloaded from the ACMP Web site)

Activity Procedure:

1. Go to the ACMP Web site, at www.ArcticClimateModeling.org, and click on “Tools and Data” to download and print stratus cloud pictures for the lesson.
2. Explain that clouds hold water in the atmosphere, or sky above Earth. When clouds release water, it falls to Earth as rain or snow. Explain that stratus clouds are thin-layered clouds that form close to the ground. Fog is a low-lying stratus cloud.
3. Show students the sample pictures of stratus clouds.
4. Distribute quilt batting, scissors, glue and one piece of the landscape background.
5. Instruct students to glue strips of quilt batting to the torn paper landscape to create stratus clouds. Stratus clouds are low altitude clouds that often cover the base of the mountains and can touch the flatlands as fog.

6. Have students label their artwork "Stratus."

7. **Wrap Up Activity:**

Reassemble the three pieces of each student landscape on a bulletin board or wall. Discuss similarities and differences between the three types of clouds. Ask students to look out the window. If it is a cloudy day, what type of clouds can students see? Ask students to describe the color, size, and shape of the clouds they can see. Many clouds represent a combination of cloud types. Repeat this observation of cloud type daily or weekly as desired.