

Clouds

CONTENT AREA & GRADE LEVEL: Science, Grade levels 1-6

TIME: one week

LESSON FOCUS:

The students will

1. Learn the names of different types of clouds
2. Identify the characteristics of different types of clouds
3. Reconstruct formation of clouds using construction paper, glue, and crayons
4. Learn to take digital pictures of cloud formations and print the photographs
5. Learn to search the internet to help identify names and characteristics of cloud formations
6. Record observable data in their journals

STANDARDS ASSESSED:

Standards

Arizona State Standard(s)

Science

Grade 1

- Strand 1: Inquiry Process
 - Concept 3: Analysis and Conclusions
 - PO 1: Organizing objects, organisms, and events according to various characteristics

Grade 1-4

- Strand 1 Inquiry Process
 - Concept 4: Communication
 - Grade 1 PO 1 & 2, Grade 2 PO 1 & 2, Grade 3 PO 1 & 3, Grade 4 PO 1

Grade 1

- Strand 3 Science in Personal and Social Perspectives
 - Concept 2 Science and Technology in Society
 - PO 1 Identify various technology
 - PO 2 Describe how suitable tools help make better observations and measurements.

Grade 1

- Strand 6: Earth and Space Science
 - Concept 2: Objects in the sky - Identify objects in the sky
 - PO 2: Compare celestial object

Grade 2

- Strand 6: Earth and Space Science
 - Concept 3: Changes in the Earth and Sky
 - PO 3: Identify the following types of clouds

- Cumulus
- Stratus
- Cirrus

ASSESSMENT:

Formative Evaluation(s)

The teacher will

1. observe that students use the internet effectively to find information following links provided.
2. observe students taking and printing pictures
3. collect student reproduction of clouds

Summative Evaluation(s)

The teacher will

1. require students to present their presentation of photos and displays (reconstruction of clouds)
2. check for terminology use during presentation

MATERIALS/BACKGROUND INFORMATION:

1. Digital camera – students may bring their own if available
2. Internet – used to further research
3. Construction paper – used for reconstruction of clouds
4. Crayons and Markers – used for reconstruction of clouds
5. Cotton – used for reconstruction of clouds
6. Glue and Scissors - used for reconstruction of clouds
7. Printer to make prints of digital pictures
8. Black and Photo printer cartridges
9. Cloud Types [http://ww2010.atmos.uiuc.edu/\(Gh\)/guides/mtr/cld/cldtyp/home.rxml](http://ww2010.atmos.uiuc.edu/(Gh)/guides/mtr/cld/cldtyp/home.rxml)
10. Types of Clouds
www.urbanext.uiuc.edu/weather/2.html
11. Clouds
www.carlwozniak.com/clouds/types.html
12. Paul Begay, *Voices of the Colorado Plateau*
The Snow Was This High, The Snow Was This High
13. Rubber stopper
14. Hammer
15. Nail
16. Gallon jug - 3.8 liter
17. Warm tap water
18. Adult Helper

Lesson Integration

Oral history called “The Snow was this High” by “ Paul Begay”.

Possible Procedures

This lesson covers the Earth and Space Science in the Arizona Science Standards. This “Cloud” lesson would be taught after a lesson in identifying characteristics of seasonal weather patterns. This lesson would also include measuring weather conditions, recording weather conditions, and analyzing how the weather affects our daily activities. After this lesson, students would investigate the atmosphere and solar system.

In language arts, reinforce this lesson by having the students search on the internet by using the addresses provided.

(Language Arts, Grade 3, Strand 3: Comprehending Informational Text - Comprehending Informational Text delineates specific and unique skills that are required to understand the wide array of informational text that is a part of our day to day experiences.)

Multicultural and Diversity

Native American culture: The “Cloud” lesson plan would also inform the students about how the Navajo culture use the clouds to predict weather. By looking at the clouds they are able to predict how much rain they may receive. Introducing the Navajo terminology in regards to clouds. Another addition to this lesson would be to tell the students of the oral history of clouds.

Gifted/Regular/Special Needs Students: The cloud making lab will be shifted, or differentiated to meet the needs of all learners. All students will make a cloud, but the activity will be assigned to groups as either, an “open inquiry”, “structured inquiry” or “guided inquiry” activity.

Engage

Use Paul Begay, *Voices of the Colorado Plateau*. **The Snow Was This High, The Snow Was This High** to discuss seasonal weather patterns.

Tell students:

- So now that we have learned about the characteristics of seasonal weather patterns we are going to be learning more about the types of clouds in the atmosphere. Clouds change just like the seasons change. The clouds also have different characteristics as they pass overhead.
- Today we will be going outside to observe clouds, make sure you bring your journal to record any important information during your observations and bring your cameras. If you do not have a camera please come see me to use the school camera.

Exploration:

- As a group in the grass area: Let’s all lie down on our backs and look up at the clouds. This would take about 5 to10 minutes.
- Please number off 1-5 and work in your number groups.
- Please stay within designated school yard areas that teacher has assigned.
- Take pictures of at least 3 cloud formations you think are interesting and would like to learn more about when we return to the class.
- Teacher might ask some of the following questions to facilitate this exploration:

What do you first notice about the clouds?

What colors do you see in the clouds?

Do you see just one color of clouds?

*Can you describe the clouds?
Do the clouds maintain the same form or shape?
What do you think clouds are made of?
What do you think will happen if it gets windy?*

Explain:

*So what did you discover about clouds?
How is a cirrus cloud different from a cumulus clouds?
How is a cumulus clouds different from a stratus cloud?
How would you classify your photographs?
How do the digital photographs help in your observations?*

This is where the students would be able to reconstruct their cloud formation using materials listed: Construction paper, Crayons and Markers, Cotton, Glue, scissors. Students work would show their understanding of cloud names and characteristics.

Elaborate:

This is where I would have the students answer some of the following questions to encourage thinking and analysis of their answers. Allow the students to draw their own conclusions and problem solving skills.

*Can you explain why some of the clouds are smaller than another?
Why do you think they are different colors?
Why do you think they shrink and expand?*

After the students have done lots of critical thinking we can apply their knowledge and experiment on a cloud making activity. The following items would be used, Rubber stopper, Hammer, Nail, Gallon jug - 3.8 liter, Warm tap water, Adult Helper.

3. Check journals for understanding or inquiries of their observations

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