For students & educators

Camp Fire
MINNESOTA

My nature connection

CURIOUS ABOUT CLOUDS

GRADES: K-6
TIME: 30 min.

UP IN THE CLOUDS

When you look up into the sky, you're usually going to see at least one cloud. But how did clouds get up into the sky, and what can they tell us?

WHAT YOU'LL NEED:

- Paper
- Pencil

ACTIVITY

INTRODUCTION

What are clouds?

Clouds are collections of water vapor particles that have condensed and stuck together.

How do clouds form?

When the sun's energy comes in contact with surface water, it *evaporates* (transitions from liquid to gas while keeping the same mass). Because the gaseous form of water is lighter than the liquid or solid form, it rises into the atmosphere. When millions of these evaporated particles start to cool down due to high elevation, they begin to stick together and form a cloud. Clouds will eventually become saturated, meaning they can't hold any more water molecules. When this happens, rain, snow, or hail will fall from the clouds, called precipitation. The continued process of water evaporating, condensing, and precipitating is called the water cycle.

Students will:

1. Learn how clouds form and how they fit into the water cycle
2. Understand that different types of clouds mean different things in regards to weather.

SETTING
Indoors and Outdoors

1. IDENTIFY CLOUD TYPES

Every cloud will have a unique shape, but we can sort each cloud into 4 broad groups: cirro-form, cumulo-form, strato-form, and nimbo-form. Each group of clouds can tell us something different about the weather. Using this page as a guide, become familiar with the 4 main types of clouds.

1. Cirro-form: These clouds are found at high altitudes and take the form of wispy white lines in the sky. Seeing Cirro-form usually indicates fair but cold weather. Cirro-form clouds in a tropical region may indicate an upcoming hurricane.

2. Cumulo-form: These clouds look like collections of puffy cotton balls with a flat base. Cumulo-form clouds are indicative of calm, warm weather.

3. Strato-form: These clouds appear like a big grey blanket over the sky. Strato-form clouds make the sky dark and mean that cold weather and precipitation are on the way.

4.Nimbo-form: These clouds mean you'll want to grab your umbrella. Nimbo-form clouds can be considered a combination of the previous three. Nimbo-form clouds are rain clouds and appear higher in the sky than the other listed types of clouds.

2. Cloud Hunt

Now that you're familiar with the different types of clouds, it's time to put your identification skills to the test. Using this worksheet (or a piece of notebook paper), walk around outside and look at the sky. Write down what different types of clouds you see and any additional observations you have (ex. temperature, wind, animal sightings, etc.).

Tip:
Be sure you dress for the weather before this activity!

Cloud Notes

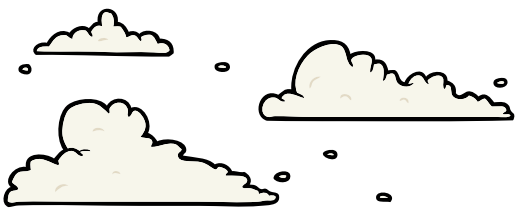
1. Did you see any cirro-form clouds? _____
How many? _____

2. Did you see any cumulo-form clouds? _____
How many? _____

3. Did you see any strato-form clouds? _____
How many? _____

4.Did you see any nimbo-form clouds? _____
How many? _____

Other observations:



CONNECTING WITH QUESTIONS

What was the first type of cloud you saw? How did you identify it?

Was there a specific cloud type you did not see?

What did looking at the clouds and comparing them to the descriptions tell you about the upcoming weather?

Share your observations with your class. Did every student see the same types of clouds? What factors could contribute to different students seeing different clouds?

ADDITIONAL RESOURCES

National Weather Service: The Four Core Types of Clouds
https://www.weather.gov/jetstream/corefour

The Science of Clouds
https://www.youtube.com/watch?v=dnL5LPil77M

TELL US WHAT YOU THINK!

Take a short survey at: campfiremn.org/mynatureconnection

Or here: Kids Survey - click here | Teachers/Parents Survey - click here

EDUCATION STANDARDS

Social Emotional Learning Competency: Social Awareness, Responsible Decision-Making

Grade Level	Science Education Standard
Grade K	0.3.2.2.1 Monitor daily and seasonal changes in weather and summarize the changes. For example: Recording cloudiness, rain, snow and temperature.
Grade 1	1.1.1.1.2 Recognize that describing things as accurately as possible is important in science because it enables people to compare their observations with those of others.
Grade 2	2.2.1.2.1 Observe, record, and recognize that water can be a solid or a liquid and can change from one state to another. 2.3.2.2.1 Measure, record and describe weather conditions using common tools. For example: Temperature, precipitation, sunrise/sunset, and wind speed/direction
Grade 3	3.1.1.2.3 Maintain a record of observations, procedures and explanations, being careful to distinguish between actual observations and ideas about what was observed.
Grade 4	4.3.2.3.1 Identify where water collects on Earth, including atmosphere, ground, and surface water, and describe how water moves through the Earth system using the processes of evaporation, condensation and precipitation.
Grade 5	5.1.1.1.1 Explain why evidence, clear communication, accurate record-keeping, replication by others, and openness to scrutiny are essential parts of doing science
Grade 6	6.2.1.2.2 Describe how mass is conserved during a physical change in a closed system. For example, the mass of an ice cube does not change when it melts.