



Topic: Clouds

MISSION: KEEP A CLOUD CHART

MISSION IGNITION!

Teachers: Introduce the Primary Goal by piquing curiosity and stimulating thinking.

Students: Engage in open-ended dialogue related to the MISSION GOALS AND OBJECTIVES.

- Encourage children to observe the sky before they enter the classroom each morning. Look out the classroom window. Through **open-ended dialogue**, discuss the Primary Goal: Are there clouds in the sky? If so, what do the clouds in the sky look like to you? What shape are they? What color are they? (Show children pictures of clouds from books, downloads, etc.) Then ask them which of these cloud pictures do clouds in the sky (today) look most like? (Note: There may be more than one type of cloud in the sky.)

- The end result of the discussion should be a need on the part of the students to explore or solve questions. Encourage children to come up with their own questions.

- Throughout the activity give children *plenty* of time to think and wonder before offering answers. And remember, every answer should be treated as a valuable contribution. Instead of judging an answer as “off topic” or “inaccurate,” say “How interesting, what makes you say that?” to find out what they are thinking!

CREW BRIEFING:

Teachers: View, read about, and discuss this “mission” with your children.

Students: Explore, ask questions, gather information, research (books, video clips, pictures), and hypothesize.

- **Read** and discuss a book about clouds (see Recommended Reading).

- **Watch** *The Zula Patrol: Under the Weather!* full-dome show. Discuss the subject of clouds, what they’re made of, and how they form:

Q: What do you need to create rain, snow, sleet or hail?

Q: What kinds of clouds have you seen in the sky? (cumulus, cumulonimbus, stratus, and cirrus)

Q: What do these different clouds look like? (shape, color)

Q: Which ones look most like the clouds in the sky today?

Connect responses to children’s MISSION IGNITION observation and discussion.

- Ask how the class can keep track of clouds. Ask students what information they want to record. Would they like to make a classroom cloud chart?

MISSION BLASTOFF!

Teachers: Support and facilitate student experimentation; introduce MISSION VOCABULARY after children describe concepts in their own words.

Students: Experience the concepts, determine procedures, use materials, and collect data.

1) Draw students’ attention to the flip chart.

2) Create a chart for measuring/tracking cloud types and descriptions on a daily basis.

3) Ask what types of clouds do children see today? Distribute the *Cloud Cut-Outs* sheet to the children. Ask students which of the cloud pictures the clouds in the sky most closely resemble.

4) Students can compare and discuss their observations and make determinations about the cloud types currently in the sky. Allow each student to cut out each of the four cloud types on the sheet to contribute to the cloud charting materials.

5) Record the cloud types by posting the relevant cloud shapes on the chart along with any other information the students determine they would like to include.

6) Collect cloud data over several days, weeks, or months. Make connections between cloud types and the weather. Incorporate cloud-tracking data into math work.

Note that this activity can be tied to learning the calendar/days of the week.



MISSION GOALS AND OBJECTIVES:

FUNDAMENTAL Goal: Children will make and keep a cloud chart.

Primary Goal: Children will learn about Form and Function by inquiring about cloud shapes and color.

Primary Objective: Children will learn to collect, record, and track cloud observations.



NATIONAL SCIENCE EDUCATION STANDARDS MET BY THIS MISSION:

• Earth and sky • Property, position, and motion of objects



MISSION VOCABULARY: Cloud, Shape, Color, Cumulus, Cirrus, Stratus, Cumulonimbus



MISSION TIME: This mission can be divided into several shorter periods of discussion, reading, viewing, and charting. Be flexible – children’s inquiry of clouds can extend and deepen over the course of a week or beyond!



MISSION EQUIPMENT AND PREPARATION CHECKLIST:

- Day with clouds in the sky
- Copies of *Cloud Cut-Outs* sheet
- Flip chart
- Markers
- Easel
- Book about clouds (flag pictures of the four main cloud types to be discussed)
- Cloud photographs, which are available in the online photo library at zula.com

Recommended Reading

Find additional titles at zula.com.

Cloud Dance by Thomas Locker

The Cloud Book by Tomie de Paola

The Kids’ Book of Clouds & Sky
by Frank Staub

Clouds (Now I Know Series)
by Roy Wandelmaier



MISSION SPIN-OFFS AND CONNECTIONS:

Teachers: *Enrich and extend content by supporting children's understanding of the Primary Goal, its connection to other concepts, and application to "real world" situations.*

Students: *Review results, analyze, record and infer, use deductive reasoning, elaborate on findings, and extend activities to the home.*

• Mission Spin-offs

1) Sign-off Mission: Create a five-columned chart. Label four of the columns with the names of different clouds. In the fifth column place a question mark (for "unsure" or other types of clouds). Every time children observe clouds, invite them to sign their name in the column they think represents the cloud they've seen. This chart can then be reviewed before charting to see how observations vary. (It's *critical* to model respect for opinions and feedback that may differ from the majority of the class.) Students can use pictures to help support their findings and to give fellow students evidence of their determinations.

2) Cloud Song Mission: Download *The Cloud Song* music and lyrics from zula.com (which reinforces the different types of clouds and associated weather). Play the song, teach children the lyrics, and encourage them to sing along!

3) Home Mission: Send an extra copy of the *Cloud Cut-Out* sheet home. Encourage families to make cloud identification part of the morning routine. Using a magnet, children can post the daily cloud shapes on the refrigerator.

• Mission Connections

Support additional learning about clouds with the *Create A Cloud In A Jar* and *Make a Rain Gauge* activities.

MISSION ACCOMPLISHED:

Teachers: *Empower students to express their conclusions and determine the next mission.*

Students: *Draw conclusions, assess learning, evaluate what they've discovered, and envision their next mission.*

1) After completing this mission, ask students to assess what they've discovered and how. What conclusions can they draw about cloud types (and their relation to types of weather)? Use their comments to reinforce the Primary Goal. Ask what else the children would like to know about clouds. For additional *Zula Patrol* activities and information, log onto zula.com.

2) Mission Accomplished Badge: Celebrate a mission accomplished by downloading this free badge at zula.com. Distribute them for children to color and wear or glue into their science journals.

Congratulations on a mission well done – keep exploring!



FICTION VS. FACT!

Fiction: It is a common misconception that if it's cloudy, then it will rain.

Fact: Not all clouds are rain clouds. And even rain clouds don't mean that it will definitely rain!

Cloud Cut-Outs

