



Topics: Clouds (Composition)

MISSION: BECOME A WATER-DUST PARTNER



Treasure in the Clouds – As Wizzy and Wigg hike up Mount Zula, they meet many types of clouds along the way.

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.*

- Go outside and look at the clouds in the sky. Show students pictures of clouds. Through **open-ended dialogue**, discuss the Primary Goal: What do clouds look like to you? (shape, color) What do you think they are made of? How do you think they're made or formed? What do they do? Would you like to find out more about clouds?

- 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).

- **Show** children the *Treasure in the Clouds* clip on your outreach DVD. Discuss the subject of clouds, what they're made of, and how they form:

Q: What happened in this story? What was it about?

Q: What are the Zula Patrollers doing at the beginning of this story?

Q: What kind of trip are they taking? (They're on a camping trip looking at clouds.)

Q: What story does Multo tell them? (about the golden cloud)

Q: Are clouds *really* made of gold? (No, they're made mostly of water and a tiny bit of dust.)

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

- Now ask students if they would like to be part of a cloud!

MISSION BLASTOFF!

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

Students: *Experience the concepts, discover, observe, and role play.*

1) Point out the masking tape "X" you have placed in the center of the play space, to mark the center of the "stage."

2) Divide children into two groups. Tell one group they are water. Tell the other group they are dust. Provide each child with a taped index card that has "Water" and wavy lines to denote water or "Dust" and little dots for dust. Ask children to tape the signs onto their chests.

3) Pair children into water and dust partners. Invite them to sit together while you read *The Cloud Story*. Explain that you will read it once or twice as they're sitting with their partners so they can imagine what movements and sounds they think would go with the words.

4) After the children have had a chance to listen and imagine, invite them to get up and act out *The Cloud Story* script. (Suggestions for movements are provided within the script, but support any student-generated ideas, as well.)



MISSION GOALS AND OBJECTIVES:

FUNDamental Goal: Children will "become" a cloud.

Primary Goal: Children will learn about Scale and Structure by inquiring about cloud composition, formation, and color.

Primary Objective: Children will learn that clouds are made mostly of water and a tiny bit of dust particles.



NAEYC CURRICULUM CRITERIA:

- Earth and sky
- Structure and property



MISSION VOCABULARY: Cloud, Shape, Color, Dust Particle, Water Drop



MISSION TIME: This mission can be divided into several shorter periods of discussion, reading, viewing, and movement. Be flexible—children's inquiry of clouds can extend and deepen over the course of a week or beyond, especially if the weather changes!



MISSION EQUIPMENT AND PREPARATION CHECKLIST:

- A day with clouds in the sky
- Open space for forming clouds
- Index cards or pieces of paper for water and dust signs
- Tape (for marking center of the space and attaching signs)
- Book about clouds
- Cloud photographs, which are available in the online photo library at zula.com
- DVD Player and Television (optional)

Recommended Reading

Find additional titles at zula.com.

Cloud Dance by Thomas Locker

Little Cloud by Franklyn M. Branley

It looked like Spilt Milk by Charles Lee Shaw



MISSION SPIN-OFFS AND MISSION 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) Condensation "sensation" Mission: There's water in the air. But, as a class, how do we know? While cloud-watching out a classroom window, have fun breathing on the glass and watching condensation form! What happened? (Children can use their fingertips to draw pictures of clouds in the steam on the window.)

2) Home Mission: There's water in the air. But, as a family, how do you know? Try this fun parent-child activity: After a shower, there will be condensation in the bathroom. Play around with the fogged mirror by wiping it and re-fogging it with your own breath. What's happening?

• Mission Connections

Support additional learning about clouds with the *Create a Cloud Calendar* and *Paint Picture Perfect Skies* 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 composition? 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 clouds are made mostly of smoke, cotton, or wool—and that they are "bags" of water.

Fact: Clouds are actually made mostly of water and a tiny bit of dust! They are created when water that is in the air mixes with a tiny bit of dust that's also in the air.



The Cloud Story



► High up in the sky a change is taking place....

A cloud is beginning to form from tiny drops of water.

The teeny tiny drops of water in a cloud are so small it takes many, many of them to form a single raindrop.

{Water children stand up and pull in their arms and legs to represent small drops.}

► But no cloud would be possible without the secret ingredient – dust particles!

{Dust children jump up as if to save the day!}

► Water drops and dust particles join together.

{Children link arms with their water-dust partners and slowly walk toward the center of the room.}

► The water drops and dust particles squeeze closer and closer together until they form a cloud, get very heavy, and then drop as rain.

{Everyone gets closer and closer together and then all fall to the floor with rainy sound effects.}