

# Cloud Unit

*Submitted by:*

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**Materials Needed:** *The Cloud Book* by Tomie de Poala  
**See the seven activities below for materials need for each activity.**

**Subject Area:** Communication Arts and Science

**Grade Level:** Lower Elementary (2)

**Show Me Standard:** CA 3, SC 5  
GOAL 1.6, GOAL 3.5

**Description:**

**SYNOPSIS:** The students will be able to identify, describe, and forecast weather using five basic cloud types.

**Introductory lesson:** To start the unit I ask the students what they know about clouds and we brainstorm and make a web of their ideas on a large sheet of butcher paper shaped like a cloud. If the weather is appropriate I like to take them out and look at the clouds and talk about them and describe what they look like.

Next I read aloud *The Cloud Book* by Tomie de Poala. This is a great book filled with a lot of information about clouds. When finished we go over the types of clouds that the book talks about. I then show them pictures of the five basic types of clouds that I want them to learn about. I give the following clues to help remember the types of clouds.

|              |                  |
|--------------|------------------|
| CIRRUS       | feathery         |
| CUMULUS      | piled up         |
| STRATUS      | like a sheet     |
| CUMULONIMBUS | thundercloud     |
| NIMBOSTRATUS | dark rain sheets |

I use this information to help them understand about clouds:

When relative humidity reaches 100 percent, the air becomes saturated and water vapor begins to condense into droplets. At ground level, mist or fog forms. When water condenses above the ground, clouds start to appear. Specks of dust can provide nuclei around which water will condense.

With variations in air temperature and wind speed at different altitudes, the clouds formed at different altitudes have different patterns. These various shapes of clouds are used to predict the weather. The names of clouds come from Latin words that describe their appearance.

We do the following sheets for comprehension work to go along with *The Cloud Book* by Tomie dePoala.

## The Cloud Book

1. What are clouds? \_\_\_\_\_  
\_\_\_\_\_
2. List the three main types of clouds.
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
3. \_\_\_\_\_ clouds are white and feathery.
4. \_\_\_\_\_ clouds are puffy.
5. \_\_\_\_\_ clouds are low.
6. Clouds that look like gray blankets are called \_\_\_\_\_.
7. What is fog? \_\_\_\_\_  
\_\_\_\_\_
8. Tell me one of the sayings about clouds-- \_\_\_\_\_  
\_\_\_\_\_

# The Cloud Book

USING THE INDEX IN THIS BOOK, ANSWER THE FOLLOWING:

1. What page would you read about cirrocumulus clouds? \_\_\_\_\_
2. What page would you read about altostratus clouds? \_\_\_\_\_
3. What page would you read about nimbostratus clouds? \_\_\_\_\_
4. What page would you read about altocumulus clouds? \_\_\_\_\_
5. What page would you read about cirrostratus clouds? \_\_\_\_\_
6. What pages would you read about stratocumulus clouds? \_\_\_\_\_
7. What pages would you read about stratus clouds? \_\_\_\_\_
8. What page would you read about cirrus clouds? \_\_\_\_\_
9. What pages would you read about cumulus clouds? \_\_\_\_\_
10. What pages would you read about cumulonimbus clouds? \_\_\_\_\_

## ACTIVITIES FOR THIS UNIT:

### ACTIVITY ONE: MAKING CLOUDS

A cloud is a huge crowd of tiny water droplets.

**Materials Needed:** clean, self-sealing plastic bags; a freezer, air

**Directions:**

Open a plastic bag and scoop some air into it. Seal the bag tightly shut. Put it in the freezer for 5 minutes, take it out, open it, and blow into it. Quickly seal it shut.

What happens? Why? How did you make a cloud?

### **ACTIVITY TWO: MAKE A CLASSROOM CLOUD!**

**Materials Needed:** 2-liter plastic soda container  
small plastic bag of ice  
matches  
black paper  
warm water

**Directions:**

1. Put warm water in container to fill 1/3.
2. Tape black paper to back of container
3. Light a match and drop in container.
4. Immediately cover the bag of ice.
5. Watch for a cloud. The paper will help it show up.

### **ACTIVITY THREE: MAKE ANOTHER CLOUD**

**Materials Needed:** warm water, jar, ice metal dish

**Directions:**

1. Place ice in the metal dish. Let it stand until the dish is really cold. Place 1 inch of warm water in the jar.
2. Place the metal dish over the top of the jar, and watch what happens inside the jar. A cloud will form near the top as the warm water evaporates, rises, and then condenses.

### **ACTIVITY FOUR: MAKE A CLOUD**

**Materials Needed:** two clear plastic cups, 1/4 cup of hot water, flashlight, magnifying glass.

**Directions:**

Ask the students if they have ever made a cloud. On a very cold day, the moisture from your warm breath condenses as it is cooled by contact with the air. If you have ever "seen

your breath" on a very cold day, you have made a cloud! Try this activity that illustrates the same concept.

- a. Pour  $\frac{1}{4}$  cup hot water into one plastic cup.
- b. Flip the second cup upside down and place it over the first cup. Make sure the rims meet to prevent the cloud from escaping.
- c. Look into the cup, and you will see a cloud. Dim the lights and shine a flashlight into the cup for an even better look. What is a cloud? Where did the cloud or water droplets you see come from? The heat in the water makes the water evaporate into the air and become a gas called a water vapor. The water vapor moved upward and turned from a gas back into a liquid when it encountered the cooler air in the top cup.

### ACTIVITY FIVE: MAKE A CLOUD

**Materials Needed For Each Group:** one 9 X 13 or larger cake pan, water tinted with blue food coloring, shaving cream and one straw for each child.

**Directions:**

1. Fill each pan with one inch of blue water.
2. Squirt a "cloud" of shaving cream onto the water.
3. Invite the children to pretend by telling them that you have just given each group a puffy, white cloud of their very own.
4. Ask, "How could you move your cloud without touching the pan or the cloud?"
5. As each group discovers that they can blow on the "cloud" to move it, provide straws to extend their exploration. Do the shaving cream clouds move faster or farther when you blow harder?
6. Challenge students to think of other ways to move the air to create wind. Provide old file folders, scrap paper, and paper plates. Encourage students to make different fans. Try testing their "wind machines" on the shaving cream clouds.

### ACTIVITY SIX: CLOUD PUDDING

**Materials Needed:** 4 cups frozen blueberries  
6 egg whites  
1 pint whipping cream  
 $\frac{1}{2}$  cup sugar  
juice of 1 lemon

**Directions:**

Mix sugar and lemon. Add fruit. Beat egg whites and fold in. Whip the cream and fold in. Children are amazed at the transformation when cream and egg whites are whipped.

**ACTIVITY SEVEN: CLOUD PUDDING**



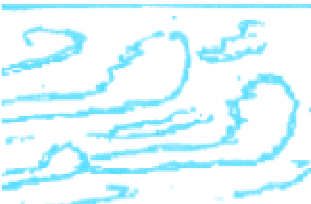

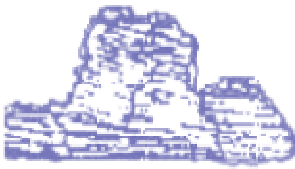
Read aloud *It Looked Like Spilt Milk* by Charles Shaw

The clouds for the mobile are made by cutting out a cloud shape from two sheets of white construction paper. The two shapes are then stapled together and stuffed with newspaper.

The children can cut cloud shapes that remind them of other things like in the book *It Looked Like Spilt Milk*. Hang each cloud from a hanger with string. Then when the clouds are finished and displayed as a mobile, children can take turns describing their clouds.

## NAMING CLOUDS

Study these clouds. Finish each sentence below with the correct cloud name. Draw the missing clouds in each picture.

|  |   |   |  |
|--|---|---|--|
| <p><b>CUMULUS</b><br/>Clouds look like piles<br/>Of fluffy cotton.</p>         |    | <p><b>STRATUS</b><br/>Clouds look like sheets covering<br/>the sky.</p> |   |
| <p><b>CIRRUS</b><br/>Clouds are curly<br/>thin clouds high in<br/>the air.</p> |    |   |  |
| <p><b>NIMBOSTRATUS</b><br/>Clouds are low and dark.</p>                        |  | <p><b>CUMULONIMBUS</b><br/>Clouds are huge, dark<br/>storm clouds.</p>  |  |

1. High up in the blue sky, Leah saw wispy, curly clouds. The clouds she were \_\_\_\_\_ clouds.
2. Through a window, John saw giant, dark clouds. It looked like a storm would start any minute. He saw \_\_\_\_\_ clouds.
3. Traci liked looking at the white, fluffy clouds that floated in the sky. She was looking at \_\_\_\_\_ clouds.
4. As Paul walked to school, he looked at the blanket of gray clouds covering the sky. These were \_\_\_\_\_ clouds.
5. As John was riding his bike he noticed that the clouds were getting low and dark. He thought he had better get home before it started raining. He saw \_\_\_\_\_ clouds.

We go over the following paper in class and I send this home for them to review for their test.

## CLOUD WATCH



**Cumulus**



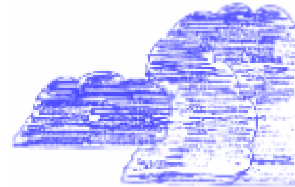
**Cirrus**



**Nimbostratus**



**Stratus**



**Cumulonimbus**

1. I am a puffy, cottony cloud. My shape is always changing. I usually mean fair weather. I am a \_\_\_\_\_ cloud.
2. I am a low, gray strip of a cloud. Sometimes I bring drizzles. I am a \_\_\_\_\_ cloud.
3. I am a black storm cloud, sometimes called a thunderhead. I am made up of piles of cumulus clouds. I may have a flat top. I am a \_\_\_\_\_ cloud.
4. I am a thin, feathery cloud high in the sky. I get together with others where the temperature is below freezing. We usually mean good weather unless we thicken. Then we mean rain. I am a \_\_\_\_\_ cloud.
5. I am a rain cloud. I am found low in the sky. I'm darker than a stratus cloud and I often send streaks of rain to the ground. I am a \_\_\_\_\_ cloud.

I use this page to help me assess the students. I have them orally describe and forecast the weather for each cloud. I then write what they say in the boxes. On the next page they are to label the clouds and I write in the identity box whether or not they did this correctly. This sheet helps me with the scoring guide later. I then send all three sheets home with the students.



# CLOUDS

|                     | IDENTIFY | DESCRIBE | FORECAST |
|---------------------|----------|----------|----------|
| <b>CUMULUS</b>      |          |          |          |
| <b>STRATUS</b>      |          |          |          |
| <b>CIRRUS</b>       |          |          |          |
| <b>NIMBOSTRATUS</b> |          |          |          |
| <b>CUMULONIMBUS</b> |          |          |          |

**Label The Clouds:**



## **CLOUDS TEST SCORING GUIDE**

### **IDENTIFICATION**

|   |   |
|---|---|
|   | 5 |
| The student can identify five types of clouds.  | 4 |
| The student can identify four types of clouds.  | 3 |
| The student can identify three types of clouds. | 2 |
| The student can identify two types of clouds.   | 1 |
| The student can identify one type of cloud.     | 0 |
| The student can not identify any of the clouds. |   |

### **DESCRIPTION**

|   |   |
|---|---|
|   | 5 |
| The student can correctly describe all five clouds. | 4 |
| The student can correctly describe four clouds.     | 3 |
| The student can correctly describe three clouds.    | 2 |
| The student can correctly describe two clouds.      | 1 |
| The student can correctly describe one cloud.       | 0 |
| The student can not describe any any of the clouds. |   |

### **FORECASTING**

|  |   |
|--|---|
|  | 5 |
| The student can describe weather from five clouds.   | 4 |
| The student can describe weather from four clouds.   | 3 |
| The student can describe weather from three clouds.  | 2 |
| The student can describe weather from two clouds.    | 1 |
| The student can describe weather from one cloud.     | 0 |
| The student can not describe weather from any cloud. |   |



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