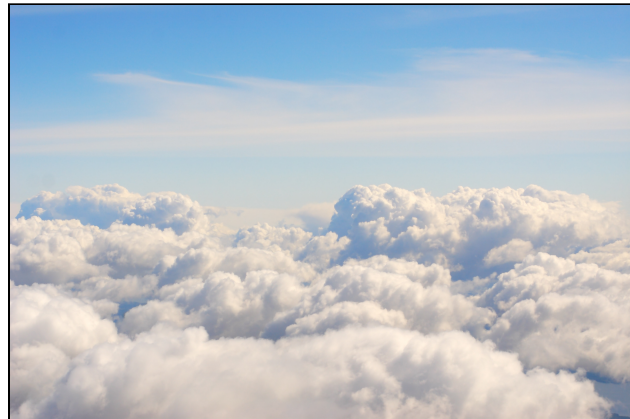Name: _____   Class: _____

What Are Clouds?
By NASA
2014

Spotting a cloud floating overhead is a common sight on our planet, but what are clouds made of? Why do they look like they do? This informational text explains the formation of different clouds and how they contribute to different types of weather on Earth. As you read, take notes on how clouds can affect weather on Earth.

[1] A cloud is made of water drops or ice crystals floating in the sky. There are many kinds of clouds. Clouds are an important part of Earth's weather.

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How Do Clouds Form?

The sky can be full of water. But most of the time you can't see the water. The drops of water are too small to see. They have turned into a gas called water vapor. As the water vapor goes higher in the sky, the air gets cooler. The cooler air causes the water droplets to start to stick to things like bits of dust, ice, or sea salt.

What Are Some Types of Clouds?

Clouds get their names in two ways. One way is by where they are found in the sky. Some clouds are high up in the sky. Low clouds form closer to Earth's surface. In fact, low clouds can even touch the ground. These clouds are called fog. Middle clouds are found between low and high clouds.

Another way clouds are named is by their shape. Cirrus clouds are high clouds. They look like feathers. Cumulus clouds are middle clouds. These clouds look like giant cotton balls in the sky. Stratus clouds are low clouds. They cover the sky like bed sheets.

What Causes Rain?

[5] Most of the water in clouds is in very small droplets. The droplets are so light they float in the air. Sometimes those droplets join with other droplets. Then they turn into larger drops. When that happens, gravity causes them to fall to Earth. We call the falling water drops "rain." When the air is colder, the water may form snowflakes instead. Freezing rain, sleet, or even hail can fall from clouds.

Why Does NASA Study Clouds?

Clouds are important for many reasons. Rain and snow are two of those reasons. At night, clouds reflect heat and keep the ground warmer. During the day, clouds make shade that can keep us cooler. Studying clouds helps NASA better understand Earth's weather. NASA uses satellites[1] in space to study clouds.

NASA also studies clouds on other planets. Mars has clouds that are like the clouds on Earth. But other planets have clouds that aren't made of water. For example, Jupiter has clouds made of a gas called ammonia.

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1. A satellite is a man-made or natural object that orbits around another object. In this context, it refers to a man-made object that sends information from space back to Earth.

Text-Dependent Questions

Directions: For the following questions, choose the best answer or respond in complete sentences.

1. PART A: Which TWO of the following sentences best summarize the article?
   A. Clouds are named based on their shape and how high or how low they are in the sky.
   B. By studying clouds, scientists can determine when there will be deadly storms.
   C. Clouds release water in different forms based on how cold or warm the air is.
   D. Earth is the only planet in the universe that can produce clouds out of vapor.
   E. Clouds are named for how much water they hold and whether they are likely to produce rain.
   F. Only clouds of certain shapes and at certain heights will release rain.

2. PART B: Which TWO details from the text best support the answers to Part A?
   A. "There are many kinds of clouds. Clouds are an important part of Earth's weather." (Paragraph 1)
   B. "The cooler air causes the water droplets to start to stick to things like bits of dust, ice, or sea salt." (Paragraph 2)
   C. "Cumulus clouds are middle clouds. These clouds look like giant cotton balls in the sky." (Paragraph 4)
   D. "When the air is colder, the water may form snowflakes instead. Freezing rain, sleet, or even hail can fall from clouds." (Paragraph 5)
   E. "Studying clouds helps NASA better understand Earth's weather. NASA uses satellites in space to study clouds." (Paragraph 6)
   F. "For example, Jupiter has clouds made of a gas called ammonia." (Paragraph 7)

3. Which of the following best describes the structure of the section "What Are Some Types of Clouds" (Paragraphs 3-4)?
   A. The author describes of the height of different kinds of clouds and then gives examples of their shapes.
   B. The author lists all of the different names of clouds and describes how quickly each kind of cloud moves.
   C. The author compares the shapes of large clouds to the shapes of smaller clouds.
   D. The author explains the science behind how clouds form.

4. What connection does the author draw between clouds and weather on Earth?

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Discussion Questions

Directions: Brainstorm your answers to the following questions in the space provided. Be prepared to share your original ideas in a class discussion.

1. In the context of the text, how do we understand the world around us? How does studying clouds help scientists better understand the world?

2. Have you ever studied the clouds and guessed what the weather would be like? Describe what you saw or experienced while studying the clouds. Were you right about the weather?