

A Short History of **EASTER ISLAND**

WORDS TO KNOW

As you read, look inside, around, and beyond these words to figure out what they mean.

- flourish
- isolated
- remote

BY MONIQUE JENKINS



- 1 Easter Island is one of the most remote, inhabited islands in the world. It is in the Pacific Ocean about 3,780 kilometers west of South America. It was formed by three volcanoes, which are now extinct. As far as inhabited islands go, Easter Island is quite small. It measures just 101 square kilometers, which is the size of San Francisco.
- 2 Scientists believe that the island was settled between 1,200 and 1,600 years ago by Polynesians. They called the island Rapa Nui. These first inhabitants, called the Rapanui, flourished. Scientists believe that as many as 7,000 people once lived on the tiny island. The earliest inhabitants moved tons of volcanic rock and used it to carve the enormous statues that look out over the island's landscape.



- 3 Rapa Nui remained isolated from other humans for hundreds of years. Then in 1722, a Dutch captain, Jacob Roggeveen, discovered it. His ship arrived on Easter Sunday, so he named the island “Easter Island.” He estimated that 2,000 to 3,000 people lived there. Fifty-two years later, Captain James Cook came to Easter Island. He counted about 600 people living in misery. Clearly, something had gone terribly wrong. Beginning in 1864, Christian missionaries arrived on the island. They found a society whose members were constantly at war with each other. The population on Easter Island continued to decline.
- 4 Finally, the South American country Chile laid claim to Easter Island. In 1966, the island was made open to tourists. Finally, in 1995, it became a UNESCO World Heritage Site. This means that governments around the world help to protect the island so that future generations of people can visit and enjoy it. Today Easter Island has about 4,000 inhabitants. Some of them are descended from the Rapanui people.



Easter Island's **DECLINE**

by Erik Lehman

WORDS TO KNOW

As you read, look inside, around, and beyond these words to figure out what they mean.

- **inhabitants**
- **fertile**

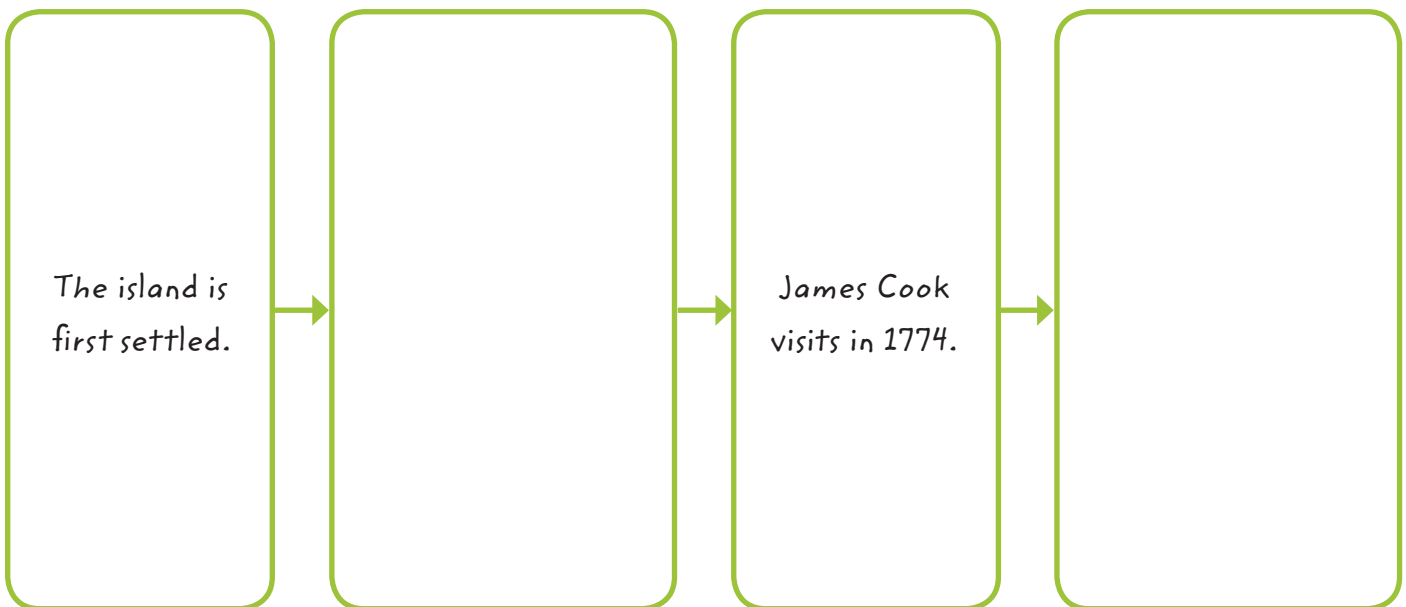
- 1 More than 1,000 years ago, a civilization thrived on Easter Island. The island's rich soil yielded harvests of sweet potatoes, and the inhabitants (called the Rapanui) ate chickens they raised. The Rapanui had a lot of spare time, and they used it to carve huge stone statues, called *moai*. The average moai was 4 meters tall. The larger ones measured more than 30 meters tall and weighed 80 tons. The island boasts 600 of these mysterious figures.
- 2 Part of the mystery is how these people moved the statues around the island. Sixty years ago, a man named Thor Heyerdahl sought to explain it. He did an experiment and showed how people could have placed the statues on huge logs. Then they rolled the heavy weights long distances atop the logs. He proved this process would have worked.
- 3 Logs come from trees, but the Easter Island of today is almost completely treeless. Where did the trees go? Scientists concluded that the Rapanui cut down most of the trees and used them to move the statues. As the forests disappeared, so did the soil. Without trees on the island to prevent erosion, rainwater washed away the fertile earth, destroying the farmland. With fewer crops, people became hungry and fought over the food that was available. The island's population plummeted from a peak of 7,000 to just a few hundred.
- 4 Today Easter Island is still treeless, but its population has grown. Now the people who live there welcome tourists who visit the grand statues and spend money. Ironically, the statues that indirectly led to Easter Island's fall are now helping to heal it.

Think and Write Use what you learned from the history articles to respond to the following questions.

- 1 Which detail in “Easter Island’s Decline” **best** explains the misery Captain Cook found on Easter Island?
 - A Thor Heyerdahl showed how the statues were moved.
 - B The volcanic rock made the soil bad for farming.
 - C The Rapanui ruined farmland by cutting down trees.
 - D The population declined to just a few hundred people.

- 2 Based on paragraph 3 of “Easter Island’s Decline,” what is meant by saying that the population of the island plummeted?
 - A The population dropped very quickly.
 - B The population disappeared because of the *moai*.
 - C The population moved to a new place on the island.
 - D The population fell from a mountain peak.

- 3 The time line below shows some events described in “A Short History of Easter Island.” Write **two** details from “Easter Island’s Decline” to complete the time line.



4

Extended Response "A Short History of Easter Island" and "Easter Island's Decline" focus on how Easter Island changed between 1722 and today. What caused **one** of the changes? How did that change affect the island and its people? Use details from **both** articles to support your response.

In your response, be sure to

- explain what caused one of the changes to the island
- explain how the change affected the island and its people
- use details from **both** articles to support your response

Get Ready to Write

- Figure out what kind of evidence from each text you need to support your response.
- Find and **underline** details in each text that support your response.
- Make a chart to organize your ideas and evidence.

Write



Learning Target

In this lesson, you learned to integrate information from two sources on the same topic. Explain how integrating information helps you better speak and write about the topic.

Directions

Read this passage. Then answer questions 1 through 5.

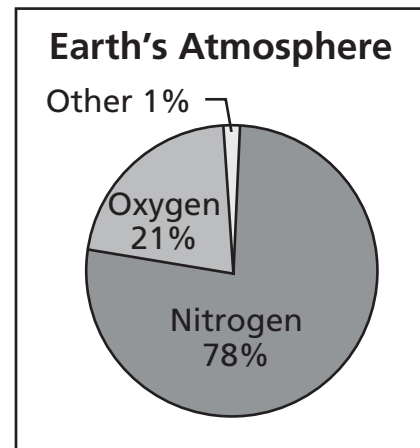
The Layers of Earth's Atmosphere

by Tawni Walker

1 Earth is surrounded by invisible gases that form a thin protective blanket that we call the atmosphere. It contains the oxygen we breathe. It also holds other important gases such as nitrogen, carbon dioxide, water vapor, and ozone.

2 Our atmosphere lets us breathe, but it is important for several other reasons. It burns and destroys meteors headed toward Earth's surface. It keeps our planet from having extreme temperature changes. Without this protective blanket, we would have hot days and freezing nights. One part of Earth's atmosphere, called the ozone layer, protects us from the Sun's harmful rays.

3 The atmosphere is divided vertically into four layers based on temperature: the troposphere, the stratosphere, the mesosphere, and the thermosphere.



vertically = up and down

Prefix	Prefix Meaning
<i>Tropo-</i>	change
<i>Strato-</i>	layer
<i>Meso-</i>	middle
<i>Thermo-</i>	heat

Troposphere

4 The **troposphere** begins at Earth's surface and extends up to 12 miles (20 km) high. This is the layer of the atmosphere in which we live. Almost all weather occurs in this region.

5 If you were to walk from the bottom of a mountain to its top, you would notice the air getting thinner and the temperature dropping. This is the general

pattern from the bottom to the top of the troposphere. At Earth's surface, the average temperature is around 62°F (17°C). At the top of the troposphere, the average temperature is around -60°F (-51°C).

Stratosphere

- 6 The **stratosphere** starts at the top of the troposphere. It then rises to about 31 miles (50 km) above Earth's surface. From the bottom to the top, the temperature increases from an average of -60°F (-51°C) to 5°F (-15°C). The stratosphere holds 19 percent of the atmosphere's gases.

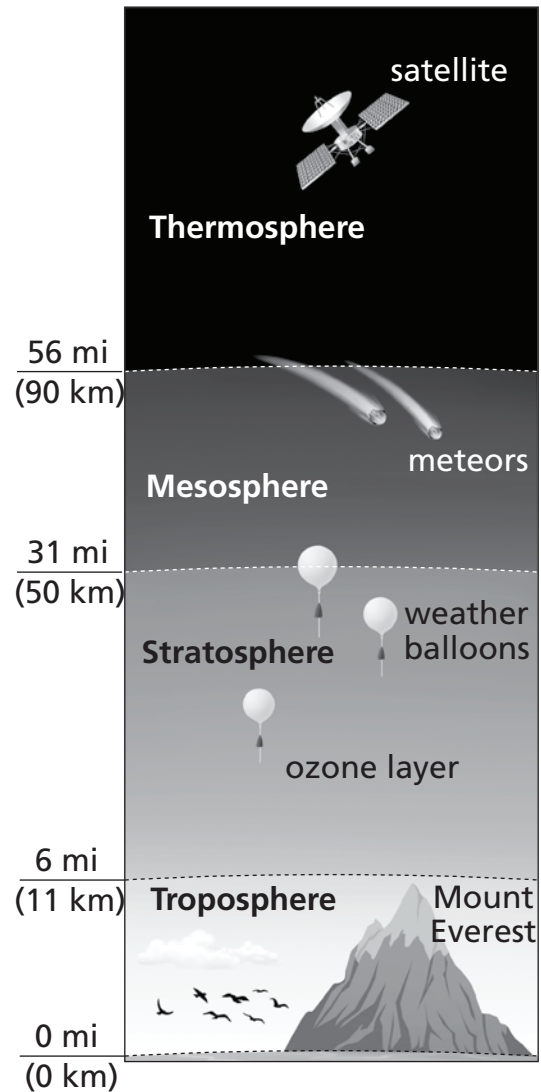
Mesosphere

- 7 The **mesosphere** begins at the top of the stratosphere. It climbs to about 56 miles (90 km) above Earth's surface. From bottom to the top, the temperature decreases from about 5°F (-15°C) to as low as -184°F (-120°C). The air keeps getting thinner and thinner. However, gases in the mesosphere are still thick enough to create friction when meteors enter the atmosphere, slowing them down as they hurtle toward Earth. This causes the meteors to burn up, leaving fiery trails in the night sky.

Thermosphere

- 8 Above the mesosphere is the **thermosphere**. This layer rises up to 375 miles (600 km) above Earth. The temperature shoots up, reaching as high as 3,600°F (2,000°C) near the top. The gases of the thermosphere are much thinner than those in the mesosphere. The next time you look up at the sky, remember this: You are at the very bottom of the lowest layer of a vast ocean of gas that rises hundreds of miles above the clouds.

The Layers of Earth's Atmosphere



meteors = pieces of rock or metal from space that enter Earth's atmosphere

1 How does the circle graph help the reader understand the information in paragraph 1 of “The Layers of Earth’s Atmosphere”?

- A** It shows that carbon dioxide, water vapor, and ozone make up less than 1% of Earth’s atmosphere.
- B** It shows that more than 90% of Earth’s atmosphere is made up of water vapor and oxygen.
- C** It shows that oxygen, nitrogen, and water vapor make up just 90% of Earth’s atmosphere.
- D** It shows that gases like carbon dioxide, oxygen, and nitrogen are only a tiny fraction of Earth’s atmosphere.

2 Which paragraph does the table on page 398 **best** support?

- A** paragraph 1
- B** paragraph 2
- C** paragraph 3
- D** paragraph 4

3 What information appears in **both** the diagram on page 399 and the text?

- A** The ozone layer protects us from the Sun’s dangerous rays.
- B** There are satellites in the thermosphere above Earth.
- C** The ozone layer is located in the stratosphere.
- D** There are four layers of Earth’s atmosphere.

4

Read this sentence from paragraph 7 of “The Layers of Earth’s Atmosphere.”

From bottom to the top, the temperature decreases from about 5°F (-15°C) to as low as -184°F (-120°C).

Based on the sentence, what does “decreases” mean?

- A** grows larger in size
- B** gets smaller in number
- C** becomes warmer
- D** changes suddenly

5

Why does the author of “The Layers of Earth’s Atmosphere” conclude that we are “at the very bottom of . . . a vast ocean of gas”? Use **two** details from the passage to support your response.

Directions
Read this passage. Then answer questions 6 through 10.

Air Works for Me

*from The Courage to Soar,
National Aeronautics and Space Administration*

- 1 Would you be surprised to learn that we live at the bottom of an ocean? It is an ocean of air. Probably because we can't see it, we take the air around us for granted. We only feel or notice air when the wind blows, so why pay any attention to it?
- 2 We all know that air is necessary for life. Animals need the oxygen in air, and plants need the carbon dioxide that air contains. Air is important to us in countless other ways, too. It dries our clothes and vacuums our floors; it lifts kites and airplanes. In air conditioners and heaters, it cools us down and warms us up. We ride on it, and we can even sleep on it (think of air mattresses). As you explore all the ways air works for you, you may be amazed.

Air Is Pushy

- 3 Air is matter: it takes up space and it has mass. Because air has mass, Earth's gravity attracts it and gives it weight. And because it has weight, it presses on things—it exerts pressure. Think about it: you have mass—your body is made up of millions of molecules. That means Earth's gravity gives you weight; because you have weight, you exert pressure. Right now, you are probably sitting on a chair, a desk, or the floor. Therefore, you are exerting pressure on the chair, the desk, or the floor. Wherever you walk, wherever you sit, wherever you lie down, you exert pressure because you have weight.
- 4 The pressure, or push, caused by air is called air pressure. Air pressure is a very strong force. It can make a hot air balloon rise into the sky, it can crush a can, and it can hold water in a glass that is upside down. To prove this to yourself, try the following experiment.

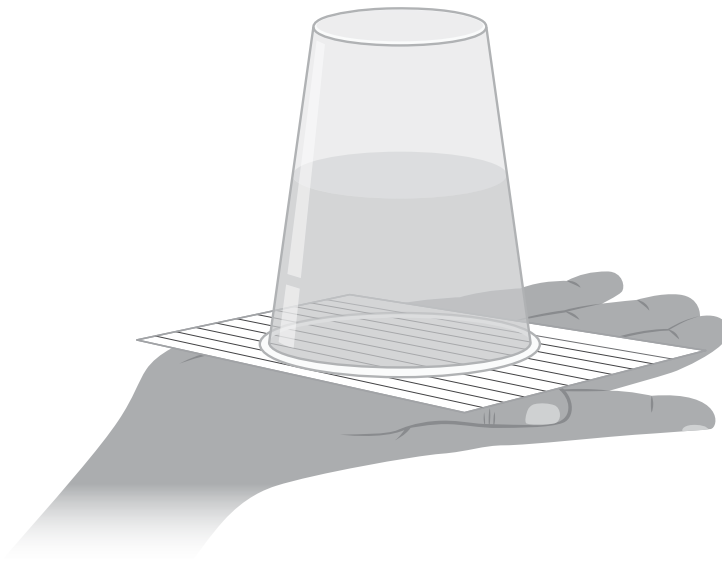
exerts = uses force to do something

molecules = tiny pieces of matter that make up everything on Earth

Is This Magic?

- 5 Fill a plastic cup half-full of water. Take some of the water and rub it along the rim of the cup to make a good seal. Lay an index card on top. Lay your hand on the index card and turn the cup upside down. Take your hand away. The air pressure will hold the water in the cup!
- 6 Since we are sitting at the bottom of an ocean of air, the air is always pressing on us. Air pressure changes as you go higher or lower in the atmosphere. As you travel higher in the sky, air pressure goes down. This is because the higher you go, the less air there is pressing down on you from above.
- 7 Picture yourself at the bottom of the ocean of air, where all of the air above you is pushing down on your body. Now, picture yourself at the summit of Mount Everest, the highest mountain in the world. There is far less air above you, so there is far less pressure on you.

summit = the top of a mountain



6 Based on paragraph 2, what does it mean to be “necessary”?

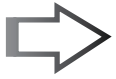
- A** to be helpful
- B** to be harmful
- C** to be needed
- D** to be wanted

7 How does the author support the point that air is important in many ways? Use **two** details from the passage to support your response.

8 Which detail appears in **both** the text and diagram in “Air Works for Me”?

- A** The cup should balance on the center of your hand.
- B** Turn the cup upside down after placing the index card.
- C** Using too little water can weaken the seal.
- D** Rub some water along the rim of the cup.

9 What are two qualities of the troposphere that living things need to survive? Use **two** details from the passage to support your response.



Plan your writing for question 10 on another sheet of paper.

10

What is the bottom layer of Earth’s atmosphere like? How are the upper layers of the atmosphere different from the bottom layer? Use details from **both** passages to support your response.

In your response, be sure to

- explain what the bottom layer of the Earth’s atmosphere is like
- explain how the upper layers of the atmosphere differ from the bottom layer
- use details from **both** passages to support your response
