HISTORY INTERNATIONAL | Airs on HISTORY
Monday, April 18 at 6am/5c

HOW THE EARTH WAS MADE:

DRIEST PLACE ON EARTH

The Atacama Desert is an arid swath of land that extends for over 600 miles from southern Peru into northern Chile. Located between the Pacific Ocean to the west and the Andes mountains to the east, the Atacama is known as the "driest place on earth," receiving an average of only three one-hundredths of an inch of rain per year. The extreme conditions in the Atacama make it an ideal location to study the ways extraordinary landscapes develop. In this one-hour program, scientists describe the methods they use to learn about the Atacama's changes over time and explain the challenges posed by doing research in this unique setting.

In *How the Earth Was Made: Driest Place on Earth*, students learn about why boulders in the desert have not moved for millions of years, and why the world's largest copper mine has been able to thrive in the Atacama. Scientists also reveal the ways their studies of this land of sand, lava flows, and salt deposits could help us understand the possibility of life on other planets. This program gives students an excellent opportunity to learn more about one of Latin America's most remarkable locales, and to compare and contrast the Atacama region with other areas they have studied.

Curriculum Links

How the Earth Was Made: Driest Place on Earth would be useful for History, Geography, Global Studies, and Social Studies courses. It is appropriate for high school students.

Vocabulary

Before or after watching this film, ask students to define the terms below. Students can also keep their own list of terms to define as they are watching.

Desolate	Hygrometer	Pluvial
Gauge	Inversion	Pyroxenes
Geyser	Parched	Recede

Discussion Questions:

1. What is gypsum and how is it formed?
2. How did scientists discover the origins and age of the Atacama desert?
3. What is the geological process known as subduction?
4. What is the "melting zone" described in this program and how does it function?
5. What is the Humboldt Current and how does it make it possible for penguins to live near the Atacama Desert?
6. What is one of the results of heavy rainfall according to scientists in this program? How does rainfall give scientists clues into when the Atacama Desert became such an extremely dry region?
7. Why was the discovery of diatomite rock in the Atacama desert significant? What did it reveal about the features of the desert long ago?
8. What were the microorganisms scientists discovered inside rocks in the Atacama, and what did they reveal about the possibility of life forms being able to live in the desert?
9. How do studies of the Atacama help shed light on the possibility of life on other planets?
10. What are some other deserts you have studied, and how does the Atacama compare with them?
11. Based on this program, would you like to visit the Atacama?

Extended Activities:

1. **Atacama: A Guide.** The Atacama desert extends for over 600 miles through two countries. Working in small groups, ask students to research the region and create a short guide book about the Atacama. These books can be created in PowerPoint or any other format. Students can include maps, images, and key facts and dates about the region.
2. **Endeavor to the Atacama.** Scientists in this program describe several research projects that have helped them learn more about the Atacama's development over time. Ask students to imagine they have been asked to propose a new research endeavor in the Atacama. Have students write short proposals of one to two pages describing their new project and how they think their potential findings might be useful to the scientific field.
3. **Distinguishing Deserts.** The Atacama is one of the world's most extreme regions, receiving far less than an inch of rain each year. Ask students to pick another desert they are interested in and write a short two-to-three-page paper comparing that region with the Atacama.
4. **Life Beyond Earth?** In this program, scientists explain how their research in the Atacama could reveal new insights into life on Mars. Based on what they learned from watching this program and from their own online research, ask students to write a short editorial about how studying the Atacama helps us learn more about the possibility of life on other planets.

Books

Ananthaswamy, Anil. *The Edge of Physics: A Journey to Earth's Extremes to Unlock the Secrets of the Universe.* Houghton Mifflin Harcourt, 2010.

Cornett, James W. *Atacama: Desert of Chile and Peru*. Nature Trails, 1985.

Miller, Frederic P. (et al). *Atacama Desert*. Alphascript Publishing, 2009.

Websites

More info from the BBC about the Atacama:
www.bbc.co.uk/blogs/scotlandlearning/2010/01/why-is-the-atacama-desert-so-d.shtml

A report on NASA research in the Atacama:
quest.nasa.gov/projects/spacewardbound/docs/McKay2002AtacamaAdAstra1.pdf

Additional background about the Atacama region:
www.frc.ri.cmu.edu/atacama/atacama.html

Information for visitors to the Atacama:
sunsite.dcc.uchile.cl/chile/turismo/atacama.html