

# HOW THE EARTH WAS MADE

## YELLOWSTONE

**A**s earth's continents shift, volcanoes erupt, glaciers creep, and polar ice caps ebb and flow, amazing geological features emerge.

Yellowstone National Park, a swath of nearly 3,500 square miles of natural beauty, is one of these places. Founded as the nation's first national park in 1872, Yellowstone is home to rivers, waterfalls, and more geysers and hot springs than the rest of the world combined. The amazing "Old Faithful" geyser is the crown jewel of Yellowstone, helping draw millions of visitors to the park each year to witness its awe-inspiring eruption.

**H**owever, this national park is not unique just for its beauty. Yellowstone actually sits on top of an ancient volcano, which produces extraordinary geological activity. In this episode, students will learn about the methods scientists have used to learn more about Yellowstone's geological profile and the ways their research has helped explain the mysteries of this landscape. *How the Earth Was Made: Yellowstone* goes behind the scenes at the park, exploring the ways scientists have been able to crack the code of Yellowstone, both above ground and below, shedding new light on one of the world's natural wonders.

### YELLOWSTONE NATIONAL PARK

#### FAST FACTS

- Yellowstone National Park was founded in 1872 as the first national park in the U.S. and the world.
- Many of the rocks in Yellowstone are among the oldest in the world.
- Over 95 percent of Yellowstone is in Wyoming, with small portions in Montana and Idaho.
- Yellowstone National Park is larger than Rhode Island and Delaware combined.

#### VOCABULARY

Using the dictionary at [www.merriamwebster.com](http://www.merriamwebster.com), an Internet resource such as [www.history.com](http://www.history.com), or an encyclopedia, students should define or explain the significance of the following terms:

- |                |             |
|----------------|-------------|
| ■ CONDUIT      | ■ RADIUS    |
| ■ CONSTRICTION | ■ RESERVOIR |
| ■ ECOSYSTEM    | ■ SATURATE  |
| ■ GEOLOGY      | ■ SEISMIC   |
| ■ INCANDESCENT |             |

#### CURRICULUM LINKS

*How the Earth Was Made: Yellowstone* would be useful for American history, American studies, geology, geography, and science and technology courses. It is appropriate for middle school and high school students.



WHY DO YOU THINK IT IS IMPORTANT TO PRESERVE YELLOWSTONE FOR FUTURE GENERATIONS?

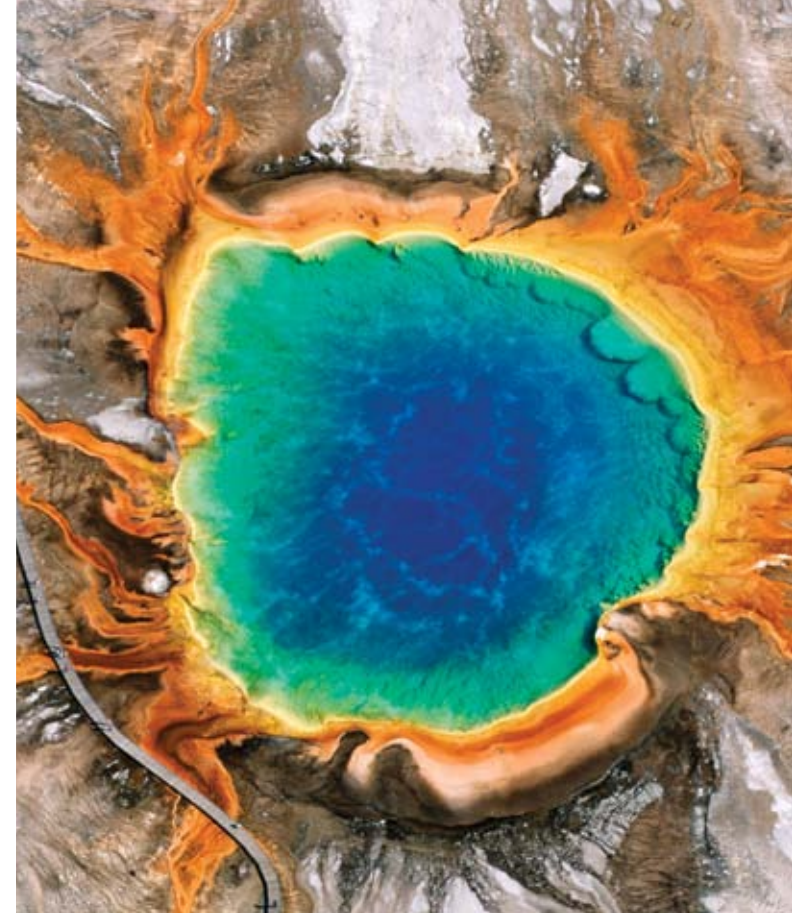


## COMPREHENSION QUESTIONS

1. When was Yellowstone founded? Why do you think it was founded as the first national park?
2. What are some of the unique features of Yellowstone?
3. What is Old Faithful, and why do you think it is the most famous attraction at Yellowstone? What does Old Faithful tell geologists about the history of Yellowstone?
4. What objects besides water does a geyser eject into the air when “erupting”?
5. What does the presence of quartz on the surface of Yellowstone tell scientists about activity below the surface?
6. What evidence is there that a volcano exists underneath Yellowstone? Think about rocks, gases, trees, soil and liquids.
7. What evidence exists that the volcano underneath Yellowstone is becoming increasingly active? Can scientists predict when it will erupt?
8. What did scientists discover in Meadow Creek, Wyoming? What did their discovery tell them about the presence of a volcano at Yellowstone?
9. What did American volcanologist William Scott discover in 1985? What does the discovery say about plate tectonics?
10. Why do you think it is important to preserve Yellowstone for future generations?

## EXTENDED ACTIVITIES

1. **Origin Story: Yellowstone.** Yellowstone was founded in 1872 as the first national park. Ask students, in small groups or individually, to research the story behind Yellowstone’s creation as a national park, including the “Act of Dedication” that was written when it was founded. Then, have them write a short newspaper article or essay about Yellowstone’s history.
2. **Explaining Old Faithful.** Old Faithful is the most famous attraction at Yellowstone, yet few understand the science behind this amazing geyser that dazzles millions of tourists every year. Research how Old Faithful works and create a diagram, on a board or on the computer, explaining the various stages of the geyser’s eruption cycle.
3. **National Parks Depicted.** During the 1930s, many colorful posters were created by the National Park Service to draw visitors to national parks. Students can search the Library of Congress website at [www.loc.gov](http://www.loc.gov) to find images of some of these posters and answer the following questions: What was the purpose of these posters? Where do you think they would have been placed? Then, ask students to create their own posters or multimedia advertisements about Yellowstone or another national park.
4. **Volcanic Activity Explored.** In this episode, scientists describe the “supervolcano” system that lies below



Yellowstone, known as the Yellowstone Caldera volcano system. Now, scientists believe that the super eruption that took place 640,000 years ago and created this system was 2,500 times as strong as the eruption at Mount St. Helens in 1980. Ask students to research the 1980 eruption and the response to it. Create a list of five lessons learned from the Mount St. Helens response and discuss how communities can be better prepared for a volcanic eruption.

## CURRICULUM LINKS

Learn more about Yellowstone on [History.com](http://History.com):  
[www.history.com/topics/yellowstone-national-park](http://www.history.com/topics/yellowstone-national-park)

National Park Conversation Association on Yellowstone:  
[www.npca.org/parks/yellowstone-national-park.html](http://www.npca.org/parks/yellowstone-national-park.html)

Windows Into Wonderland: Yellowstone lesson plans:  
[www.windowsintowonderland.org](http://www.windowsintowonderland.org)

National Park Service homepage on Yellowstone:  
[www.nps.gov/yell/index.htm](http://www.nps.gov/yell/index.htm)

## BOOKS

Hendrix, Marc. *Geology Underfoot in Yellowstone*. (Mountain Press Books, 2011).

Smith, Robert B. and Lee J. Siegel. *Windows Into the Earth: The Geologic Story of Yellowstone and Grand Teton National Parks*. (Oxford University Press, 2000).