



SCIENCE CAREER
ADVENTURES



Teresa the Volcanologist: Learning About Volcanoes

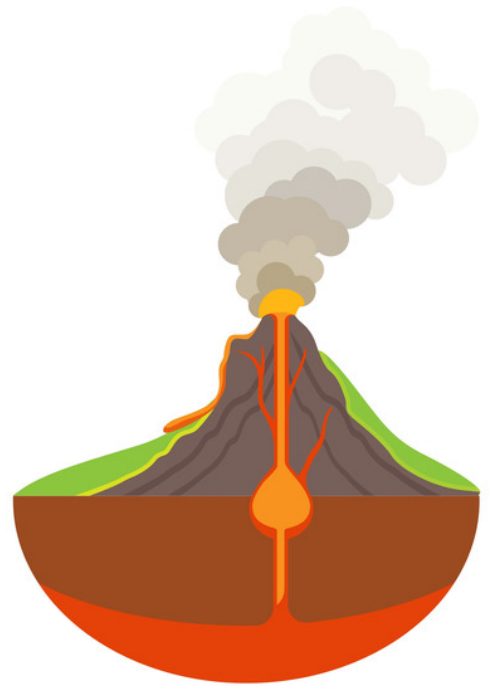
Who is Teresa?



Hi! My name is Teresa, and I'm a volcanologist. Volcanologists study volcanoes.

What is a volcano?

A volcano is an opening in the Earth's surface. Volcano openings release lava and gases from beneath the Earth's surface. Lava is the hot melted rock shot out of volcanoes. The release of lava and gas is a part of the Earth's rock cycle. The rock cycle changes the rocks on Earth from one type to another. Rocks that start out on Earth's surface get pushed deep under the Earth. Energy from the molten layers of the Earth melt the rock. The melted rock is later released by volcanoes as lava.



What Volcanologists Do

Volcanologists have many different responsibilities. Here are a few examples:



Observe volcanic eruptions: Eruptions happen when pressure builds up underneath the Earth's surface. If the pressure gets too high, volcanoes release gas, lava, and pieces of rock into the air.



Collect samples from volcanic activity: When eruptions take place, volcanologists collect rocks and gases released from the volcano to learn more about it.



Monitor dead volcanoes: Dead volcanoes happen when volcanoes stop erupting. These volcanoes need to be monitored because they sometimes erupt after being dead for a while.

Fun Fact:

Did you know that volcanic lightning exists? There are only 200 known accounts of people witnessing the lightning!



What I am Working On

I work at Yellowstone National Park! Yellowstone National Park is a national park located in parts of Wyoming, Montana, and Idaho. Right now, I am studying the Yellowstone Caldera. The Caldera is a 45-mile-wide supervolcano. Supervolcanoes are giant volcanoes that release incredibly high amounts of lava and gases that cover a lot of land.

The Yellowstone Caldera has had three major eruptions in the past 2.1 million years. The most recent eruption was 30,000 years ago. Even though these eruptions happened a long time ago, some volcanologists think that the volcano might erupt again soon! I want to figure out whether the Yellowstone Caldera is going to erupt again.



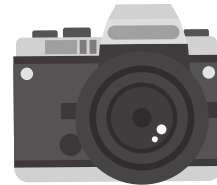
Studying the Supervolcano

To study the supervolcano, I am going to write out a plan on my iPad!

Steps for studying the supervolcano:

**Step
1**

Take pictures of the supervolcano.



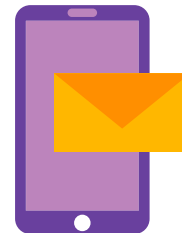
**Step
2**

Study the pictures of the land around the volcano.



**Step
3**

Share the pictures with other scientists to see if they look the same as other volcanoes that have erupted.



Taking Pictures of Supervolcanoes

To take pictures of supervolcanoes, I use a satellite imager. A satellite imager is a tool that takes pictures of the Earth from space. With a satellite imager, I can see how the land around the volcano changes over time.

The land around a volcano changes because of the rock cycle. Energy from the molten layers of the Earth push melted rock up towards Earth surface. As the melted rock moved up, it pushes upward on the Earth's surface. Because of this, when a volcano is going to erupt, the ground can crack, swell, or inflate like a balloon because it is melting. If I see these changes, it might mean that the volcano is about to erupt!



Studying Pictures of the Land Around the Volcano

I will look at the pictures from the satellite imagers to look for changes caused by the rock cycle around the Caldera. If there are changes, it could mean a possible eruption will happen soon. Once I have organized the pictures from the imager, I will share them with other volcanologists around the world. Comparing my pictures with those of other scientists will help me to figure out if the volcano is going to erupt soon.

New Message

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To: jim@volcanologist.org

Subject: New photos from the Yellowstone Caldera. Compare with yours and get back to me!

