

CLOSE READING

Volcanoes: Nature's Fire

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(Genre: Science Magazine Article)

- 1 Imagine that you are looking at a beautiful mountain. You notice its snow-covered peaks. You see its tree-lined sides. The mountain is part of the landscape of your home.
- 2 Now, imagine that one morning you wake up and see that the mountain has been transformed. The normally calm rock face is disturbed. Steam and ash are spouting out of the peak. The mountain has suddenly become an active volcano!
- 3 This is exactly what happened when Mount St. Helens erupted in 1980. The volcano had been dormant, or quiet, as long as anyone could remember. Many people in Washington State lived near the mountain. Visitors came to enjoy its rugged beauty. On May 18, however, Mount St. Helens erupted, killing 57 people.
- 4 Volcanoes are one of Earth's most powerful forces. Few of us have seen an erupting volcano. There are many active and dormant volcanoes located in North America today. Scientists study volcanoes to learn more about how our planet changes.
- 5 The mantle is the thick layer of rock under Earth's surface, or crust. Beneath the mantle is Earth's core. Earth's core is hotter than the surface of the sun!
- 6 The heat from the core melts the rock that makes up the mantle. The molten rock, called magma, seeps up through the crust. When magma reaches the surface, it becomes lava. The lava builds, along with ash and rock. When this happens, a volcano forms.



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KEY IDEAS AND DETAILS

7 Most volcanoes develop at the boundaries of two tectonic plates. Tectonic plates separate and collide, creating cracks in Earth's crust. Magma is able to push through these cracks to become lava. Some volcanoes form at hot spots, or weak places in the crust. The volcanoes in the Hawaiian Islands often form at hot spots.



8 There are four main types of volcanoes: shield volcanoes, cinder cone volcanoes, lava dome volcanoes, and composite volcanoes. Scientists classify volcanoes based on their shape and on the type of lava they produce.

9 The largest volcanoes in the world are shield volcanoes. Shield volcanoes form from rapidly flowing lava. The lava cools and creates a dome shape. Some shield volcanoes overlap with others. The Big Island of Hawaii is actually made up of five shield volcanoes.

10 Cinder cone volcanoes are the most common type of volcano. Cinder cone volcanoes erupt with violent explosions. The eruptions push lava into the air. When the lava cools, it forms the sides of the volcano. Cinder cone volcanoes can be covered by thick volcanic rock.

11 A lava dome is a round volcano. It forms when sticky lava flows slowly over the landscape. Sometimes, lava domes can be created after an explosive eruption. All of the gas inside the volcano is released. All that is left is the slow-moving lava. The lava builds up in a round dome shape.

12 A composite volcano usually looks like a tall mountain before it erupts. The gas inside the volcano builds up and causes an explosive eruption. Sometimes, it looks as if the whole top of the mountain has blown off. Mount St. Helens is a composite volcano.

13 Volcanoes can be either active or dormant. Active volcanoes are those that have erupted sometime in the past 10,000 years. Dormant volcanoes have been quiet for a long time but may erupt again. Extinct volcanoes are ones that scientists believe will never erupt again.

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- 14 Just as there are different types of volcanoes, there are different types of eruptions. Volcanic eruptions are named after the region in which they are found. For example, Hawaiian eruptions are gentle, with quickly moving lava flows. In Strombolian eruptions, lava spurts into the air repeatedly. Plinian eruptions are explosive eruptions of ash and steam.
- 15 There are at least 50 active volcanoes in the United States. These volcanoes are expected to erupt again. Most of these volcanoes are part of the large group of active volcanoes that circle the Pacific Ocean. This group is called the Ring of Fire. More than 75% of the world's active volcanoes are part of the Ring of Fire.
- 16 Volcanoes in North America are of all types. They display different kinds of eruptions. Some of the best-known volcanoes are in Hawaii, in the Pacific Northwest, and in Alaska.
- 17 Kilauea, a shield volcano, is the youngest volcano on the Big Island of Hawaii. Many scientists believe that Kilauea began to form sometime between 300,000 and 600,000 years ago. It has been erupting ever since. Scientists study Kilauea to learn more about active volcanoes.
- 18 Sunset Crater Volcano National Monument, in Arizona, is a dormant cinder cone volcano. It erupted in the year 1065, but scientists believe that someday it could erupt again.

KEY IDEAS AND DETAILS

- 19 The area around Sunset Crater is covered in volcanic rock. The mountain is made of a thick blanket of cinders. Visitors to the monument have a difficult time walking in the cinder deposits. In other areas, the landscape has large, sharp pieces of cooled lava. Visitors can take a tour of the volcano and learn about other cinder cones in North America.
- 20 Mount St. Helens may be the best-known volcano in the United States. This active volcano is located in the western Cascade Mountains of Washington. It was once a majestic mountain with a snow-capped peak. Now, it is best known for its explosive eruption in 1980.
- 21 Mount St. Helens was releasing steam and ash for two months before the first eruption occurred on May 18, 1980. The explosion blew off one side of the mountain, reshaping its appearance. It destroyed forests and wildlife. On May 25, a second eruption created a lava dome in the crater of the first eruption.
- 22 Volcanoes are destructive, but they also are rich in minerals and precious gems. In addition, the soil that eventually develops from volcanic eruptions often leads to better plant and animal life. As scientists continue to study volcanoes, they learn more about how these powerful giants behave.

Comprehension Check

- From text evidence in paragraphs 1–3 and 20–21, you can infer that Mount St. Helens
 - is not in the Ring of Fire.
 - changed appearance drastically and quickly.
 - is a cinder cone volcano.
 - has now gone extinct after erupting in 1980.
- Which sentence from page 74 expresses the main idea of this article?
 - This is exactly what happened when Mount St. Helens erupted in 1980.
 - Few of us have seen an erupting volcano.
 - There are many active and dormant volcanoes in North America today.
 - When magma reaches the surface, it becomes lava.

