



DISASTERS

# VOLCANOES

ANN WEIL

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## CHAPTER 1 | Introduction

# DATAFILE

### Timeline

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#### August 28, 1963

Civil rights activist Martin Luther King Jr. gives his famous speech, “I Have a Dream.”

#### November 8, 1963

An underwater volcano begins to erupt near Iceland. Later, it becomes the island Surtsey.

### Where is Iceland?





### **Did You Know?**

Volcanoes can produce gems and crystals. Zeolite crystals grow in the spaces left by old gas bubbles in lava.

### **Key Terms**

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**magma**—melted rock inside the earth

**Ring of Fire**—imaginary line that shows where tectonic plates meet

**volcanologist**—a scientist who studies volcanoes

## CHAPTER 1 | Introduction

A mountain explodes. Big rocks are thrown high up into the sky. Burning hot lava rushes down the sides of the volcano. If there is a town or village nearby, this can mean disaster.

Erupting volcanoes kill many people. They also cause a lot of damage. But volcanoes aren't always bad news. Many people like to look at volcanoes. They travel long distances to see them. Vegetables grow better in soil near volcanoes. That means more food for the people who live there. Volcanoes produce some very beautiful gems and crystals. And the ash left in the air makes sunsets prettier.

There are volcanoes all over the world. There are even volcanoes in outer space! Most of Earth's volcanoes are underwater. But it's the volcanoes on land that cause the worst disasters.

## **What are Volcanoes?**

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Some volcanoes look like mountains. They are wide at the bottom and narrow on top. These are called cone volcanoes. They look like an upside-down ice cream cone. Some volcanoes don't look like mountains at all. They look like big holes in the ground.

Volcanoes are very different from mountains. They have a hollow center. It's like a big, long pipe that goes deep underground—all the way down through the Earth's crust.

The crust is the cool, hard surface of our planet. Earth may seem solid, but it's not. The Earth's crust is like a broken eggshell. Most volcanoes are along the cracks in the Earth's crust.

It is very, very hot inside our planet. It is so hot that rocks melt into liquid metal called magma. The huge pieces of the Earth's crust are called plates. Plates float on top of the magma. Magma can burst through the gaps between plates. This is how volcanoes are born.

Some volcanoes erupt frequently. These are called active volcanoes. Many volcanoes have not erupted for hundreds of years. These volcanoes are dormant, or "sleeping." Some volcanoes are considered extinct. This means we think they will never erupt again.

## **The Ring of Fire**

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Most active volcanoes are on the "Ring of Fire." The Ring of Fire is an imaginary line where plates meet.

And not all eruptions are violent. Some active volcanoes just let off steam. Only violent eruptions cause disasters. And there are usually warning signs before a volcano erupts with enough force to cause a disaster.

## **Warning Signs**

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People cannot stop a volcano from erupting. But there is still a lot we can do to avoid future volcano disasters.

Scientists who study volcanoes are called volcanologists. There are volcanologists all over the world. They work together to learn more about when and why volcanoes erupt. Volcanologists watch many active volcanoes. They are looking for signs that a volcano is about to erupt. Many disasters were avoided because people were evacuated before a volcano near them erupted.



Earthquakes are the most common warning sign. If there is an earthquake underneath a volcano, chances are that volcano is about to blow. Volcanoes and earthquakes often occur together where two plates meet. Both can result from shifts in the Earth's crust.

Earthquakes aren't the only warning sign. Magma rising up inside a volcano can make a lot of noise. Occasionally, the whole mountainside bulges from the force of the magma. Sometimes steam and gas come out of a volcano before it erupts. And there are usually small eruptions before a big one. All these warning signs give people a chance to escape.

But some volcanoes give no warning at all. These can be the deadliest volcano disasters of all.

## **A World of Volcanoes**

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Our planet was shaped by volcanoes. Millions of years ago, volcanoes covered the Earth. Eruptions created the land we live on today.

## **Japan**

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The islands of Japan are located on the Ring of Fire. The Japanese experience many earthquakes and volcanic eruptions.

## **Iceland**

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Iceland is made up of volcanic rock. Two plates underneath Iceland are pulling apart. This creates a crack in the Earth's crust. Magma flows out from this crack at the bottom of the ocean. It rises up and hardens into rock. This is how the island of Iceland was formed.