Science

Genre

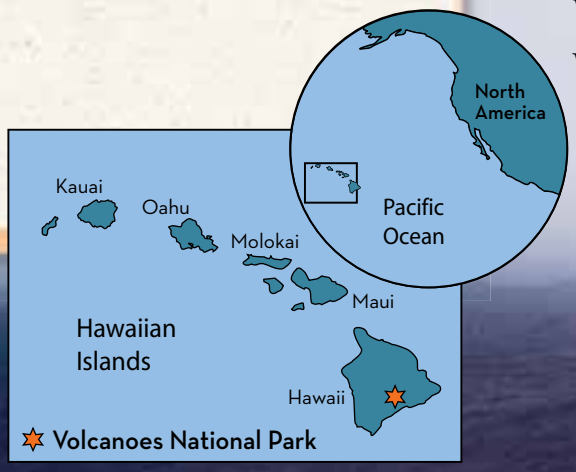
An **Informational Essay** is a nonfiction piece about a particular topic and can tell a story about a real-life experience.

Text Features

Graphic Aids, such as maps, photographs, captions, and subheadings, help you more fully understand the information in an article.

Content Vocabulary

lava
billow
fire-resistant



VOLCANO!

by Forrest Gale, as told to Lora Gale
photos by G. Brad Lewis

How would you like to live on an island way out in the middle of the Pacific Ocean? I do and it's really incredible. There are coral reefs and rainforests and, best of all, an erupting volcano!

My dad's a park ranger at Hawaii Volcanoes National Park, on the "big island" of Hawaii. (See map.) A volcano named Kilauea (kill-uh-WAY-uh) has been erupting here for more than 20 years. Watching it erupt is really exciting. So when the volcano is putting on a show, my friend Heather and I grab our gear and hit the trail!

GO TO THE FLOW

Usually we go on a **lava** hike late in the day. That's because it's easier to see the glow of the lava as the sky starts to darken, especially from far away. By now we know the safety rules by heart: Hike with an adult, stay on the trails, wear sturdy shoes, carry a flashlight (so we can find our way home after dark), and *never* touch hot lava.

We rush to a volcano-viewing area that's been set up by the park rangers. Then we sit and watch for hours. We see fiery colors, from yellow to orange to cherry-red. The lava crackles and pops and forms weird, wrinkly shapes. Getting close to an erupting volcano is like having front-row seats at the best fireworks show ever!

You can see a vent, or opening, in the side of Kilauea. That's where blobs of hot lava blast out from inside Earth. Golden rivers of lava then race down the side of the volcano and toward the coast.

When the hot lava reaches the cool ocean, huge clouds of steam **billow** hundreds of feet into the sky. And as the lava cools and hardens, it adds more solid rock to the edge of our ever-growing island.

Above: **Christina Heliker, a scientist, goes "fishing" for lava samples. Special clothes protect her from the heat.**

VOLCANO-WATCHERS

When we aren't looking for lava, Heather and I go to the Volcano School of Arts and Sciences. Kids at our school get to help scientists working at Hawaii Volcanoes National Park and the Hawaiian Volcano Observatory.

One of the scientists is Christina Heliker. Once a week, she suits up for an important—and dangerous—job. Her work clothes are sturdy boots, a **fire-resistant** suit and hood, a gas mask, and two pairs of heavy gloves. One of her tools is the heavy head of a sledgehammer tied to a long steel cable. The challenge is to use it to snag a sample of super-hot lava.

Christina has to get as close as she safely can to Kilauea's vent. Then she lowers the hammer head into the flowing lava until a glob sticks to it. "You can't imagine the heat," she says. "The hammer and cable glow red."

Christina and the other scientists are trying to learn all they can about lava and volcanoes. That will help them find better ways to predict when dangerous volcanoes might erupt. And knowing that will allow people who live near those volcanoes more time to get safely away.

Left: **We're helping scientist Tamar Elias. She's collecting samples of gas from steam that's spewing from the volcano. (You can see clouds of steam in the background.) By learning more about the gas, she can learn more about how volcanoes erupt.**

A LIVING EARTH

It's great to know and help these scientists. Their research not only helps people—it also helps us learn how Earth works. And one thing's for sure: Here in Hawaii, we never forget that Earth is *alive!*

So, why not come visit us sometime? You won't want to miss Kilauea, one of the world's greatest and longest-running lava shows.

Connect and Compare

1. How do the map, photographs, and captions help you understand the information more thoroughly? **Graphic Aids**

2. If you visited Kilauea or another volcano, what would you do to stay safe? **Evaluate**

3. If the people of Pompeii had the same knowledge and tools to understand what causes volcanoes to erupt as modern-day scientists do, how might events have turned out differently in "The Dog of Pompeii"? Explain. **Reading/Writing Across Texts**

Science Activity

Research volcanoes. Create a fact card for a volcano that interests you.

LOG ON Find out more about volcanoes at **www.macmillanmh.com**

Write an Explanation for Two Audiences

Writer's Craft

Precise Words

Think about your audience, the people who will be reading your writing. Use **precise words** to convey your meaning. Make sure your words are appropriate for those readers.

Hello, Surtsey

(for a third-grade class)
by Tomás M.

I used words that third-graders would understand.

Surtsey is an island near Iceland. This island is the newest one on Earth. It was formed in 1963 when a volcano erupted. The volcano sent up lava for two years, covering about one and a half square miles, until it finally stopped. The lava had made a new island. The island was named Surtsey for the Viking fire god called Surtur.

The Story of Surtsey

(for a high school class)

I used harder words for the high school students.

Below the island of Surtsey lies the Mid-Atlantic ridge. Here, two of Earth's plates-the North American and the Eurasian-touch. However, these plates are slowly pulling apart as magma oozes up between them to form volcanoes along the ridge. Such undersea volcanoes are called rift volcanoes.

It was a rift volcano that erupted and formed Surtsey in 1963. Red-hot lava poured from the new volcano, building up gradually over two years, to form the island.

Your Turn

Think of a short explanation of a natural phenomenon, such as a tornado or how a canyon is formed, that you can write for two different audiences. As you write, think about your audience and choose the best words for that audience. Vary your sentences by combining sentences using adjectives, adverbs, and prepositional phrases. Use the Writer's Checklist to check your writing.

Writer's Checklist

- ☐ **Ideas and Content:** Are my explanations clear for both audiences? Did I include all the important information?
- ☐ **Organization:** Do my explanations have a main idea and supporting details?
- ☐ **Voice:** Am I successful in communicating my interest in this topic?
- ☐ **Word Choice:** Did I use **precise words** that are appropriate for each audience?
- ☐ **Sentence Fluency:** Did I vary my sentence lengths? Did I combine sentences using adjectives, adverbs, and prepositional phrases?
- ☐ **Conventions:** Did I use correct spelling and punctuation?