mystery science

Grades K-5
Mini-Lesson: “Could an animal live in a volcano?”

VIDEO TRANSCRIPT

VIDEO 1

Hi, it's Danni. One of the most dangerous adventures I've ever been on was a visit to a volcano. I flew in a helicopter to see a volcano up close just before it erupted. It was an intense experience. Waves of heat were coming out of the volcano like an oven. The ground was rumbling. I could smell ash and smoke and a stinky smell like rotten eggs. I could see lava sloshing around inside the volcano’s center. The helicopter was bumping up and down so badly, it felt like the entire world was shaking. It was overwhelming. Someone named MacKenzie has a question about volcanoes. Let's call MacKenzie now.

[Video Call]

- Hi, Danny.
- Hi, MacKenzie.
- I have a question for you. Can an animal live in a volcano?
- That's a great question.

In 2015, a team of scientists set out to explore a volcano named Kavachi. Kavachi is a volcano near the Solomon Islands. That's right around here. This is Kavachi here. Except…wait. This is just ocean water, right? Where's the volcano? See that? That burst of water and steam and smoke on the surface is coming from the volcano. This whole volcano is underwater. Think of an underwater volcano like a mountain on the seafloor. The whole mountain is surrounded and

covered with water. But when the volcano erupts, lava and ash and other stuff explodes out the top. Some of that stuff explodes into the air, like it's doing here. But some of it ends up in the water. Like, see this cloudy patch of water here? Check out what that water looks like under the surface. It's cloudy and hard to see. The water gets hot, and all that ash and lava also make the water a lot more like acid than regular ocean water. When a liquid is very acidic, it can burn your skin. Kavachi is a very active volcano, which means most of the time, it's either erupting or about to erupt. So the team of scientists who wanted to see what was going on inside Kavachi had to plan carefully. They waited for the volcano to stop exploding, which doesn't happen very often. Then the whole team got in a boat. They took the boat right over the top of the volcano. Then they lowered a video camera on a line into the water. The camera sank down, down, down, all the way into the crater (that's the hole at the top of the volcano). After a while, they brought the camera back up. Now, when you think of ocean water that's full of life, you think of someplace like this: a healthy coral reef with lots of sunny, clear water. That's not what the water near Kavachi is like at all. So the scientists knew not to expect that, but they didn't know what they'd see. Let's take a look at some of the video from the camera the scientists sent down into Kavachi. Count how many living things you see. I'll be quiet for a bit so you can observe. Great, what living things did you see?

VIDEO 2

There's actually so much life down here! There are fish and sharks. The scientists found two different kinds of sharks inside Kavachi: hammerhead sharks and silky sharks. How could all these animals survive here? It's definitely true many living things couldn't make it down here. In general, when the water in some parts of the ocean gets hotter, cloudier, or more acidic, a lot of living things there don't survive. But it looks like some animals can survive in these conditions.

The fish spotted here don't have it easy. When temperatures go up and acid levels rise, a lot of fish die…but it looks like not all of them die. Some of them survive. And that is good news for sharks. Sharks are tough creatures. They can survive in conditions that would make other ocean animals sick. But no matter how tough they are, sharks still need something to eat. Luckily, the ocean waters around Kavachi still have the fish these sharks like to eat. Some scientists think that the wavy, cloudy waters near the volcano actually make it easier for sharks to sneak up on fish. As long as there are fish to snack on here, the sharks can survive here too. So, in summary, an animal can live in a volcano, or any place, as long as that place has what the animal needs to survive. Because these fish and sharks can stand the hot, cloudy, acidic waters inside the volcano, and because they both can find the food they need here, it looks like they can make a life here…at least for now. There's still so much we don't know about what goes on in this volcano. Scientists took this video during a pause in the volcano's explosions. But what happens to these animals when the volcano is actually erupting? Do they leave? Do they die? They can't possibly live here when this thing is actively exploding lava. At least, we don't think so. But we've been surprised by these animals before. These critters living in a volcano may still have a lot to teach us about how animals survive and how we can help other creatures survive in changing or even difficult conditions. That's all for this week's question. Thanks for asking, MacKenzie.