mystery science

Grades K-5
Mini-Lesson: “Why does this rock look like a sponge?”

VIDEO TRANSCRIPT

Hi, it's Doug! What's the weirdest rock you've ever found? Mine is this one. I just love it. It's got these green crystals on it. Isn't that cool? I really like this idea—I've heard that every rock has a story to tell if you know how to read it.

Well, this week, someone named Jack has a question for us about a rock he found. And his rock has a story that I think is going to really surprise you. Let's give him a call now.

[Video Call]

- Hi, Doug!
- Hi, Jack! I heard you have a question for me.
- I was wondering, I found this rock with all these holes in it. How do they get there?
- That's a great question. Let me show you something.

Here's a closeup of the kind of rock that Jack has. Why does it have all these holes in it? Well, we could just go ask a rock expert—a geologist—that's a scientist who studies rocks. But how do they know? How do people figure things out? Like, how did all the little holes get in this rock?

The best is if we could actually see what's causing the holes to form. Like, maybe some bird is pecking on the rock or something. Now, if we happen to see a bird doing that, then we would

know. "Ah, that's why there are those holes." But people searched, and they searched and searched, and no one saw the holes being formed in the rock.

They did find a clue, though. These rocks are always found near volcanoes. Whoa, interesting! So why would they have little holes in them? Scientists carefully watched volcanoes to see if they might notice anything.

Look at this. This is a closeup of lava flowing along the side of a volcano. Do you notice anything interesting about this lava flow? Here, I'll play it one more time. You will want to take a moment to look more closely.

Okay. You ready?

There are lots of interesting things to notice. One thing I noticed is that there's all this gray stuff on top. What is that? Here, you have got to listen. Did you hear that? It sounded like bits of rock clinking together. This gray stuff up here is rock. You might know that when lava cools off, as it's happening on the top of the lava flow here, it hardens into rock. This stuff used to be lava that has cooled off and become rock.

Here's something else I noticed. This lava is all blocky and bumpy as it flows. It turns out, if you look even closer at this lava, you see that it's got bubbles in it. It's kind of foamy, similar to the foam you see on top of a drink.

When that foamy lava cools and the bubbles burst guess what it looks like—a foamy rock with lots of holes in it. The holes are where there were bubbles in the lava. It's called pumice, from an old word meaning "like foam", or froth.

Now, all of this is very interesting. But I haven't told you the best part yet about pumice.

- Jack, what do you think would happen if you took a rock and you dropped it in a tub of water?

- Nothing, I think it would just sink to the bottom.

That's true if I use any rock other than pumice. But watch what pumice does. See, because pumice is a rock that has all these little holes in it, it's not as dense as most rocks. It's very lightweight for its size. It's so light, in fact, that it can float on water.

So, pumice is a volcanic rock that has lots of tiny holes in it. Scientists have observed lava when it erupts and found out that sometimes lava has lots of little bubbles in it, which makes it foamy. As the lava cools off and becomes rock, those bubbles burst and become the little holes you see. That's what pumice is.

You don't have to live near a volcano to find a piece of pumice. Sometimes pumice can be purchased, like, at landscaping stores where it's used in people’s gardens. And, there's even a skincare product made out of pumice. It's good for scrubbing really rough patches of skin.

If you haven't already started a rock collection, pumice can be the first piece in your rock collection. Just look for rocks that have lots of tiny holes. And, if it floats on water, then you know it's pumice.

Thanks, Jack, for asking that question!