mystery science

Grades K-5
Mini-Lesson: “Where does salt come from?”

VIDEO TRANSCRIPT

VIDEO 1

Hi, it's Doug! Do you use a salt shaker to put salt on your food? Well, I was excited to find out recently that you don't have to use a plain ordinary salt shaker. There are artists who make salt shakers out of just about any object or shape you can imagine. Whatever your favorite kind of thing is, there's probably a salt shaker made to look like that thing. Someone named Fotini has a question about salt. Let's get Fotini a call now.

[Video Call]

- Hi, Doug!

- Hi, Fotini!

- I have a question for you. Where does salt come from?

- Ooh, that's a great question.

Maybe you're thinking about this because you put salt on your food. You have a sense of where some of your food comes from. It's not hard to see that vegetables you eat are plants or come from parts of plants—broccoli, asparagus, carrots, they're all from plants. Likewise, you probably know with fruits, many of them come from trees—apples, oranges, pears. But salt? Salt seems like a weird one. Does it come from a plant? Before I say anything more, what do you think?

VIDEO 2

You might be familiar with the idea that the ocean contains water that's salty. It's tempting to think maybe salt comes from the ocean. Do people somehow get the salt out of the water? Hmm, that's an interesting idea. Let's hang on to that idea and come back to it a little later. One really interesting clue is to look at salt under a magnifying glass or even a microscope. Look at this. When you do, you find out that salt is made of these little tiny square-shaped crystals, they almost look like little bits of rock. And in fact, if you have salt like this, it's been ground up, but you can actually buy salt before it gets ground up. It's often in a form that's bigger and chunkier which does look like tiny rocks, it's called rock salt. Whoa, is salt a type of rock? Does it come from the ground? How would we even find this out? How could we track this down? Well, one way would be to call up some of the people who make and sell salt. There are many different brands of salt sold at the grocery store. So what you can do is look up the makers of salt and then just ask them: Where do they get the salt from? And guess what? Well, I went ahead and did that for you. Here you can see a place where salt is being mined out of the ground by machines. Whoa, so salt is a solid material that comes from the ground. If you wanna call it a rock, you could. It's a type of solid material called a mineral. Now it's not found just anywhere in the ground. You can't just dig in the ground and expect to find salt it's only found in some places on earth. Sometimes there's salt, just lying on the ground itself, like a field of salt. When this happens, this is called a salt flat, like this salt flat in Utah, or this salt flat in the South American country of Bolivia. A place that has so much salt they've even built an entire hotel out of salt. In certain other places on earth where salt is found though it's not found lying on the ground, but instead has to be dug from underground. When this is done, sometimes as people dig farther and deeper into the ground to get the salt, they have to create tunnels. This leaves behind

incredible passageways. An entire cave is carved into the ground. And sometimes in surprising places too, like when salt was found to be in the ground underneath the City of Detroit, Michigan. A place where you can walk around on the surface and see tall buildings, city streets, but meanwhile, hidden below the city, tunnels, caves, and passageways carved into the salt. Detroit, Michigan isn't the only place with salt caves and tunnels. What you're seeing here is a salt mine found under the ground in the country of Pakistan. The caves and tunnels that have been dug out of the salt over the years are so big now that people actually go and visit them. Or check out this building located in the country of Iran. The people who designed this building were inspired by the beauty of underground salt caves. They made this entire restaurant out of salt, much of which comes from a nearby salt mine. But now what is all that salt doing in the ground? How did salt get there, to begin with? Why is there salt in the ground? Well, remember earlier when we thought about the fact that the oceans are salty, you can get salt out of ocean water by boiling or evaporating the water which leaves salt behind. This is actually a second different way of getting salt. In some places—where they make shallow pools of salt water, then let the water evaporate or dry up on hot dry days—it leaves salt behind. One idea that scientists have about why there's salt located in certain places in the ground is that those might be places where there used to be ocean water. As that salty ocean water dried up, it left the salt behind. So in summary, salt is something we eat, but doesn't come from a living thing. Instead, it's more like a rock, it's a mineral, a solid material we dig out of the ground. That's all for this week's question. Thanks, Fotini, for asking it!