mystery science

Grades K-5
Mini-Lesson: “What’s the hottest place on Earth?”

VIDEO TRANSCRIPT

VIDEO 1

Hi, it's Esther! Want to see something cool? Check it out. This is Venus. The second planet from the sun. Actually, it's not cool at all. Since it's so close to the Sun, it's really hot. See all those clouds, those clouds trap that heat in, which makes it even hotter, almost nine hundred degrees Fahrenheit. In heat like that, even some metals like lead would melt. Whoa! Someone named Miguel has a question about hot places but on a different planet. Let's give Miguel a call now.

[Video Call]

- Hi, Esther!

- Hi, Miguel!

- I have a question for you. What is the hottest place on Earth?

- That's a great question.

Though the air temperature on Earth doesn't get as hot as Venus, there are places on our planet that can get pretty warm. Like these colorful geothermal pools, I visited in Yellowstone National Park. The water in these pools can get to almost two hundred degrees Fahrenheit. Which is almost as hot as the boiling water you cook pasta in and see the water shooting out of these undersea vents, that water can reach seven hundred degrees almost as hot as the temperature on Venus. Oh and check out the lava in this volcano in Hawaii. That lava is over two thousand

degrees Fahrenheit. Now all those places are super hot. But there's another way to tell how hot a place is by measuring the temperature of the air outside, like the heat you feel when you go out to play on a sunny day. And depending on where you live, that air temperature can get pretty warm sometimes. Before I go on, I'm curious. What's the hottest place you've ever been?

VIDEO 2

I don't know how you answered, but I bet some of you have been to some pretty warm places. I grew up in Chicago and in the summer, the temperature would rise past ninety degrees sometimes. Ninety degrees feels pretty hot. We'd start to sweat when we were outside, even when we weren't exercising. Some people would even hang out in shopping centers or buildings where there was air conditioning just so they could stay cool. Yeah. Chicago can get pretty hot. But there are a lot of places in the world that can get a lot hotter and that's when things can really start to get uncomfortable. You can burn your feet if you're walking barefoot on the sidewalk, and some things can even start to melt like crayons and even candy like gummy bears. We can tell what the temperature is outside at home by using a thermometer like this one. There are also special thermometers in weather stations all over the world. Weather stations have special tools that help scientists measure things like rainfall and air temperature. With stations like these, scientists can measure the temperature of air in faraway places. Like this one, for almost a hundred years, scientists thought El Azizia in the deserts of Libya was the hottest place on earth when a thermometer there reached a scorching one hundred and thirty-six degrees. Whoa. But here's the thing. Scientists now think that it might not have actually been quite that hot in El Azizia that day. They just don't think the temperature there was measured in the right way. To figure out who has the record for the hottest place on earth, we

can't just wave any thermometer in the air and get it right. We need to be careful to measure the temperature the same way everywhere so it's fair. One way to do that is to make sure to put the thermometer in the right place. It's kind of like if you and your friend were having a contest to see who lived in the hottest city. You wouldn't want to put your thermometer in a car that's been sitting in the sun all day to measure the air temperature. It would be a lot warmer in the car than outside and that would make your city seem a lot hotter than it really is. That wouldn't be fair to your friend. In the same way, you wouldn't want to put your thermometer under a tree either because it would be cooler there than places with no shade, and that wouldn't be fair to you. And that's one of the reasons scientists think the record-breaking temperature at El Azizia was wrong. The thermometer used to measure the record temperature wasn't put in the right place. It was put on top of concrete that got really hot in the sun, kind of like the inside of a car gets. So a few years ago, scientists realized that because the temperature wasn't measured correctly, the actual hottest place might be somewhere else, somewhere called Furnace Creek in Death Valley, California. A place that once reached a temperature of one hundred and thirty-four degrees Fahrenheit, one of the hottest temperatures ever recorded. Now it's important to know that the one hundred and thirty-four-degree temperature in Furnace Creek was also measured a long time ago. And just like the thermometer and El Azizia, some scientists think the Furnace Creek thermometer wasn't in the right place either. Some even think the person measuring the temperature may have measured it wrong, but even after they moved the thermometer to a better place, Furnace Creek continues to reach some of the highest temperatures on Earth. About two years ago, the weather station thermometer at Furnace Creek recorded a temperature of one hundred and thirty degrees. That's so hot. People that were there that day said that it felt like they were standing under a giant hair dryer. Today, furnace Creek holds the record for the hottest temperature ever measured, but that doesn't mean it's the hottest place on

earth. Here's why the earth is huge, so huge that there aren't enough weather stations in the world to measure the temperature everywhere. Some of the hottest places on earth, like parts of the Sahara and Gobi deserts, are really hard to get to. There are no roads and no places to get water. So scientists haven't set up weather stations there yet. Satellites from space can measure temperature, but they aren't as accurate as actually having thermometers on Earth. Without a thermometer on the ground, we really don't know how hot a place is. So it might be that there are hotter places than Furnace Creek we just haven't measured the temperature there yet. So in summary, as of twenty twenty-three, Furnace Creek in Death Valley, California, whole the record for the hottest temperature ever recorded at one hundred and thirty degrees. But even so, it may not be the hottest place on earth. There are lots of places without weather stations that might be even hotter. We just haven't measured the temperature there yet. And who knows. By the time you see this episode, there might be a new record for the hottest place. That's all for this week's question. Thanks, Miguel, for asking!