mystery science

Grades K-5
Mini-Lesson: “Why are rainforests so rainy?”

VIDEO TRANSCRIPT

VIDEO 1

Hi, it's Danni. After graduating high school, I traveled across the US for a summer job in the Hoh Rainforest. This isn't the kind of rainforest with howler monkeys and macaws. You're more likely to see elk and banana slugs. But like other rainforests around the world, the Hoh has lots of trees and other plants. There's so much growing there that even tree trunks are covered by plants. And when the sun shines through the leaves above you, the entire forest looks neon green. We called it the green glow. Like other rainforests, the Hoh Rainforest also gets a lot of rain, and someone named Josh is curious about that. Let's give Josh a call now.

[Video Call]

- Hi, Danni.

- Hi, Josh.

- I have a question for you. Why are rainforests so rainy?

- That's a great question.

Rainforests grow in some of Earth's rainiest, wettest places. But just how much rain are we talking about? Well, if you lived in the US city of Chicago, you'd get about this much rain over a typical year. That's roughly three feet. That might sound like a lot, but the whole rainforest gets nearly four times more rain, about eleven to twelve feet a year. And rainforests in other places get over thirty feet of rain. That's about as high as a three-story building. That's so much rain.

But when I visited a rainforest, I didn't see much water. And while some rainforests do flood, they're not underwater all the time. So where does all that rain go? Maybe you have some ideas.

VIDEO 2

To find out where that rain goes, let's take a trip to a different rainforest, the Amazon. Now this is the kind of rainforest where you can find monkeys and macaws. See that river below? That's the Amazon River. A lot of rain will end up there, but let's go inside the forest to see where else the rain goes. Standing in the forest, the air around you feels warm and wet. And if you listen closely, you can hear the rain before you see it. It's like the forest is a huge umbrella over your head. Raindrops patter against the tops of the tallest trees. They bounce through a maze of branches and vines and drip down from leaf to leaf before sliding and splashing their way to the ground. You can feel the squishy mud beneath your feet as the rain soaks into the wet soil. If you could follow that rain underground, you would see these, the roots of trees. You probably know that roots help plants take in water. These roots will soak up rainwater, which will travel into the trees and help them stay alive. But that water doesn't stay in the trees forever. Check it out. You're up above the trees now. Do you notice that white stuff over the treetops? Maybe you've seen something like this before. It reminds me of fog or steam, like when you boil water. In fact, that white stuff is water. After trees taken the water through their roots, they release some of that water out through their leaves. Only now, instead of being drippy like rain, the water is a gas that floats in the air. You can call it water vapor. All these trees release a lot of water vapor, so much that it can start to look like miniature clouds. And those tiny clouds help bigger clouds form until eventually, those clouds drop more rain on the rainforest. This repeats again and again. Rain falls, then gets absorbed by trees in a rainforest. The trees release it

back into the air as water vapor, which makes rainfall on the forest again. It's like the trees in a rainforest are recycling rain. Rainforests around the world get lots of rain for a variety of reasons, but scientists have discovered that wet weather in some rainforests gets a big boost from trees. All those trees can help a rainforest stay rainy by recycling water back into the air so it falls on the forest again. And where there's water, there's life. When part of the rainforest gets cut down, rain doesn't get recycled in the same way. Without the rain from their cloud making neighbors, nearby trees have a harder time surviving. Over time, the area becomes drier, and it stops being a place where a rainforest can grow. People are working on creative ways to regrow sections of rainforests, but it's a difficult task. Each rainforest is a complex community of plants and animals that developed over many, many years. A change like this can unfortunately be permanent. That's why it's so important to keep rainforests and other wild places from being damaged in the first place. So in summary, rainforests are places that get a lot of rain. There's more to discover about why some places on Earth are so wet and others are so dry. But one reason some rainforests are so rainy is because their trees help recycle rain. The trees take in rain through their roots, then leaves release it back into the air as water vapor. All that water vapor helps form clouds that make it rain again on the forest. By recycling rain, a rainforest's many trees can help it stay rainy. That's all for this week's question. Thanks, Josh, for asking it.