mystery science

Grades K-5
Mini-Lesson: “How does hair grow?”

VIDEO TRANSCRIPT

VIDEO 1

Hi, it's Doug! Have you ever cut your own hair? Well, this is my niece Catherine when she was about three years old. That's when she decided to cut off the very front part of her hair. Let's just say it wasn't the best haircut in the world. Now, she claimed her imaginary friend made her do it. Eventually, her hair grew back, but it took a while. Hair doesn't grow very quickly. Someone named Seth has a question about hair. Let's give Seth a call now.

[Video Call]

- Hi, Doug!

- Hi, Seth!

- I have a question for you. How does hair grow?

- That's a great question.

You've probably thought a lot about your hair. Maybe you have a favorite hairstyle, like braids, like bangs, or a quiff. That's when you brush it upwards and back, like this. You may have even seen Xie Qiuping's hair of China. According to the Guinness Book of World Records, she holds the record for the world's longest hair. Her hair grew 18 1/2 feet long. That's longer than a school bus. Or there's Tyler Wright. His record-breaking afro is almost one foot high. But how does hair even grow this long? Before we answer, it may be helpful to look at what you already

know about hair. You know that people have different hairstyles. You know that your hair grows. Otherwise, you wouldn't have to cut it. You also know that it grows slowly, really slowly. Imagine taking a walk outside. Besides hair, are there any other things in nature that grow slowly?

VIDEO 2

I'm not sure what ideas you may have come up with. But one thing I thought of was a tree. Trees also grow really slowly like our hair. Could it be that the growth of our hair has something in common with a tree? Like, does our hair grow because we water it in the shower? Well, not really. Our hair would still grow if we didn't get it wet, but in some ways, it is like a tree. Take a look at your hair in the mirror. Hold a piece of your hair in your fingers and look closely at where it meets your head. It's kind of hard to see, but each piece of our hair is coming out of a tiny hole and each piece of hair has a part of it that keeps going underneath your skin a little ways, just like a tree has a part of it that keeps going underneath the ground—the root. Does each piece of our hair have a root? Well, you can't see into these holes very easily, but using microscopes, scientists are able to look down under your skin to the bottom of that hole. It turns out, in each hole, there's a little round thing called a follicle. That's where all the magic happens. You see, scientists have discovered that just like the roots of a tree soak up water and nutrients from the earth, a follicle soaks up nutrients from the food you eat and turns that into the material that your hair is made of. As the follicle creates more and more hair material, the hair material begins to pile upwards in a column, eventually poking out of your head. That's what each strand of hair is, the piled-up hair material made by each follicle. The bottom part of each follicle is actually alive, which is why it hurts when you pull a piece of hair out. But the part that you see, the hair material that piles up. it's dead so you can cut it and it doesn't hurt. But what would happen if we never cut our hair? Would it just keep growing and growing like Rapunzel's hair in Tangled?

Well, it would probably get really long, but even though your hair would grow a lot, it would never get as long as Rapunzel's. There's a reason she's a made-up character from a story. That's because, in real life, each hair on your head stops growing after about five years, then it falls out and gets replaced by a new hair. So each hair on your head doesn't keep growing forever because we shed our hair. You've probably noticed this in pets too. If you own a dog or cat, I bet you've seen lots of fur around the house. That's because it's normal for living creatures to lose each hair after a certain amount of time. Old hair falls out and new hair grows in. It's happening constantly. But you may be wondering, if we're always losing each hair, why is it that some people are able to grow their hair so long? Well, remember earlier when I said each hair on your head stops growing after about five years and falls out, that's true for most of us, but scientists have found out that for some people, their hair stays on their head a little longer than it does for the rest of us. That gives it more time to grow. There are so many other questions you might be wondering about hair now. Like why do some people go bald as they get older? And why do people have different colored hair? All great questions. Maybe we can explore these in another episode. So in summary, hair grows from tiny round things in your head called follicles. The follicle gets material from your food and turns it into hair material. As the follicle creates more and more hair material, it begins to pile upwards, eventually poking out of your head. That's all for this week's question. Thanks, Seth, for asking it!