mystery science

Grades K-5
Mini-Lesson: “Why do snakes shed their skin?”

VIDEO TRANSCRIPT

VIDEO 1

Hi, it's Doug! This is my family's pet tortoise, Mr. Tortoise. I know, not the most creative name in the world. Like other tortoises and turtles, as Mr. Tortoise grows, he sometimes sheds little bits of skin, even layers of these little plates on his back. Someone named Molly has a question about another kind of reptile that does this. Let's give Molly a call now.

[Video Call]

- Hi, Doug!

- Hi, Molly!

- I have a question for you. Why do snakes shed their skin?

- Ooh, that's a great question.

Walking around in a forest, you might even find something like this—an entire skin left behind by a snake after it shed. It's not common to see a wild snake in the act of shedding its skin, but people who have pet snakes have filmed lots of videos of this. Like, check this out. This is a type of snake called a milk snake. This one is named Candy Cane, and Candy Cane here is in the process of shedding his skin, with a little help from his caretaker. Shedding starts at the snake's head and it can take hours or days for the snake's old skin to be fully left behind. And it's not just snakes that do this. Insects do this too, like dragonflies, for example. You can sometimes find the shed skins left behind by them, sitting on the tops of tall grass—or, in many

parts of North America, you can find the shed skin left behind by this—a cicada. Wow, look at that! Spiders do this too, like this tarantula. Even some ocean creatures do this. Crustaceans like this crab, as it slowly backs out of its old shell, shedding and leaving it behind. Whoa, look at that! Why do all of these animals do this? Well, one clue is how often they do it. All of these animals shed their skin a lot more when they're young; when they're growing. Some baby snakes will shed their skin every two weeks. Gradually, as they get bigger and bigger, they do it less often. Instead of every two weeks, it becomes more like two to four times per year. So, shedding their skin seems to have something to do with how they grow—but wait a second, because we grow too and we don't shed our skins like a snake or an insect. Can you imagine? Would our parents save it and show our friends? Aww, come look at the skin you shed when you were a little baby. Aww, it's so cute. Oh, that would be so weird! And it's not just us either. Lots of other animals don't seem to shed their skin as they grow: dogs, cats, hamsters. Why do animals like snakes and insects shed their skin, but other living things don't?

VIDEO 2

Well, actually it turns out we *do* shed our skin—not our entire skin all at one time, the way a snake or an insect or a crab does, but as our bodies grow, we do grow new skin and we shed little bits of old skin as we're growing. Usually, these little bits of skin we shed are so small, we don't tend to notice them. But sometimes, like if you wear dark clothing, you actually can notice little flecks of it here and there. It's no big deal, we all do this, and when you think about the fact that it means your body's growing, it's actually kind of interesting. So then, why do these other animals shed their entire skin all at once? That's something that's hard to know for sure, but it's probably something that's helpful to them. I asked this question to some scientists who study these animals. Some of them think that one possibility is that their skin is less flexible than ours.

Animals like insects, spiders, and crabs have a tough outer layer of skin that acts like a shield. We call it an *exoskeleton*. With such tough, rigid skin, it might be that being able to shed the entire skin every few months is what allows these animals to grow. There could be another reason too—a lot of animals often have tiny creatures living on them, tiny things like ticks, fleas, lice. Sometimes, these little animals even carry diseases. Scientists have pointed out that when snakes shed their skin, it leaves lots of these little pests behind. Shedding their skin gets rid of these pests. So maybe shedding their entire skin all at once is a special feature that some animals have to get rid of pests. Now, that said, animals that don't shed their entire skin can still get ticks and lice on them, so they have to rely on other ways to get rid of these. Like these giraffes, who rely on birds to help pick them clean of any little pests. Or these snow monkeys in Japan—they're carefully grooming each other to remove any tiny pests that might be hanging out in their fur. So, in summary, lots of animals shed their skin to make room as they grow. Some of them do it all at once, some not. Shedding their skin all at once has an interesting plus—you don't have to take a shower! That's all for this week's question. Thanks, Molly, for asking it!