mystery science

Grades K-5
Mini-Lesson: “Why do bug bites itch?”

VIDEO TRANSCRIPT

VIDEO 1

Hi, it's Esther. Have you ever stopped to look at a bug? Like, really look at it? The way it flies, the way it moves, the way it eats. Like, check out this butterfly. See that long, pointy thing on its face? Butterflies don't have mouths or teeth like we do. Instead, they use that tube to sip nectar from flowers. It's kind of like drinking from a straw. And I bet almost all of you have seen these buzzing around. Most flies don't have teeth either. So they use their spit to soften their food into a soup so they can drink it. Woah. Oh, and get this. Did you know bees sip up nectar with their long tongues, and then they save it in one of their two stomachs? So cool. Someone named Kai has a question about bugs. Let's give Kai a call now.

[Video Call]

- Hi, Esther.
- Hi, Kai.
- I have a question for you. Why do bug bites itch?
- Oh, that's a great question.

Bugs have mouths that are pretty different from ours. We use our teeth to bite, but bugs, not so much. When bugs bite, it can be more like a pinch or a poke. Bugs can bite us for lots of different reasons. Some insects, like ants, bite us to protect themselves. While other bugs bite us to get nutrients they need to survive. Like this mosquito. Recognize that long tube on its

face? It's kind of like the one we saw on the butterfly. Most of the time, mosquitoes use it to sip nectar from flowers, just like butterflies and bees do. But sometimes, they use it to sip something else. Can you guess what? Yep. You guessed it. Our blood. Our blood has nutrients that mosquitoes need. But no matter why bugs bite, our bodies pretty much respond in the same way: we start itching. And even though we scratch and scratch and scratch, we might stay itchy for a long time. But why is that? Why are they so itchy? Before I go on, I'm curious. Why do you think bug bites are so itchy?

VIDEO 2

To answer this question, let's look at a mosquito up close. See how it's using that long tube to get what it needs? When bugs like mosquitoes bite you, they don't just take your blood and fly away. Just like flies, they leave a little spit behind. I know, sounds gross. But the spit is super important for the mosquitoes. It helps stop blood from getting sticky so they can drink it more easily. But here's the thing: your body reacts to the saliva a mosquito leaves behind. Your body sends a chemical called histamines to the spot where you were bitten to help get rid of the saliva. You know how your skin can look red and puffy after a bug bite? That's actually your histamines at work. Histamines are kind of like little alarm bells. Histamines alert your body when there's something that isn't usually there, like mosquito saliva, so it can clear it out. But they also make the spot where the bite happened itchy. It's almost like your body's way of saying, “Pay attention to this spot.” The cool thing about histamines is that they don't just work on bug spit. They also work on many kinds of venom, the kinds of venom that bugs like fire ants or bees use to sting you. See, it doesn't really matter whether it's saliva from a mosquito or venom from a bee. Your body is going to react in the same way: it's going to send histamines to try and get rid of it. And that's what's going to make you itch. And sometimes that itching can be

really annoying. Luckily, there are medicines that can help. Some of those medicines are called antihistamines, which actually means “against the histamines.” Antihistamines help calm down the histamines in your body, so the swelling and itching aren't as bad. Some antihistamines come in creams you put on your skin, while others are pills you can take. They don't stop bug bites from happening, but they can make them a lot less itchy. So, in summary, when something unusual like bug saliva or venom gets into your skin, your body reacts by sending histamines to help get rid of it. Though histamines are helpful, they can also make the bug bite red, swollen, and itchy. I know all that itching can be annoying—but remember, it's just a sign that your body is doing its job. And if the itching gets really bad, a medicine called antihistamines can help. That's all for this week's question. Thanks for asking, Kai.