mystery science

Grades K-5
Mini-Lesson: “Why do you get goosebumps when you’re cold?”

VIDEO TRANSCRIPT

Hi, it's Doug! So, I am walking into my kitchen and opening my freezer, because I want to purposely put my arm in the freezer. You know why? I'm trying to get goosebumps on purpose. You know when you're cold, you get those little bumps on your skin.

Well, Trevor had a question about these bumps. Let's actually get him on the line now. Here, I'll call him.

[Video Call]
- Hi, Doug!
- Hey, Trevor!
- Why do we get goosebumps when we are cold?
- That's a great question, Trevor.

Have you ever gotten goosebumps? Check them out up close. What do you notice there? Maybe you've noticed that your skin gets all these little raised-up bumps everywhere. That's why people call them goosebumps.

Where does the “goose” in the word come from though? Well, people thought the bumps kind of look like the skin of a bird when it doesn't have feathers if you've ever seen that. But notice something else, too. This is a closeup of someone's arm. Watch what happens when they get

goosebumps. Whoa! You see that? Now, this person has pretty dark hair on their arms. Watch again. Pay attention to what those little hairs are doing. Did you see it? All the little hairs are moving.

When you get goosebumps, the little bumps make those hairs go straight up. Now you might not have nearly as much hair on your arms as this person does, but if you look closely at your arm right now, you'll see there are little hairs like this all over. So your hairs stand up when you get goosebumps. But why? Why would your hair stand up when you get cold? One thing scientists have found helpful is to look at the bodies of other living things, besides just human beings. Like, to look at the bodies of animals. Sometimes that leads to clues.

And here's a clue. It turns out that many animals get goosebumps when they're cold too. Look at this. This is what a cat looks like when it has goosebumps. Now, because it's furry, it's hard to see bumps on its skin. But notice how its hair stands up too, just like ours does. Cats do this when they're cold. See, normally their fur would just look like this. You see the difference?

And you can see it on birds too. Birds don't have hair but they do have feathers coming out of their skin. And those feathers stand up when they're cold, just like hair does. It makes the bird look puffy. See, here's what this bird would look like normally when it doesn't have goosebumps. You can look for this next time you see a bird early in the morning. They're still cold from the nighttime. So they're often all puffed up like this. Why do you think animals' hair or feathers might puff up when they're cold? Do you think there's any way that might be helpful to them? If you want to take a moment to think about that, pause the video now.

Okay. You ready?

One idea scientists had is that maybe by puffing up their hair or feathers that somehow keeps them warmer. By using a thermometer, scientists can measure how warm or cold the air is. It turns out when a cat puffs up its fur like this, or a bird puffs up its feathers, scientists figured out that puffing up keeps the air warm near the animal's body. Puffing up like that makes the fur or feathers act like a thick comfy coat.

So to solve the mystery, why do we get goosebumps? Human beings, and many animals, often get goosebumps when they're cold. Their skin raises up these little bumps, which makes their hair stand straight out. For animals, that helps them stay warm. For human beings, it doesn't really help us stay warm. If we were furry it would help, but we just don't have very thick hair on our bodies.

The fact that we do get goosebumps might seem kind of silly, or useless, but it shows we have something in common with animals.

That's all the time we have for this week. Thanks, Trevor, for asking why we get goosebumps!