mystery science

Grades K-5
Mini-Lesson: “Why are butterflies so colorful?”

VIDEO TRANSCRIPT

Hi, it's Doug! I've shared butterflies with you before, but I want to show you two more today. Their bodies were preserved by scientists who were studying them. This one is called a lemon emigrant. And you might guess from the name lemon, it's because it's bright yellow. It lives in parts of Asia and Australia. But now let me show you what some people consider to be the most brightly colored butterfly in the world. It's this, the blue morpho. It lives in parts of Central and South America.

Someone named Malia has a question about butterflies. Let's give her a call now.

[Video Call]
- Hi, Doug!
- Hi, Malia!
- I have a question for you. Why are butterflies so colorful?
- That's a great question.

When you think about it, it seems strange that butterflies are so colorful. With so many predators, like birds that want to eat them, wouldn't being colorful be a bad thing because it would make them stand out? For example, take this butterfly that's bright orange. There's no way a butterfly like that could hide from birds, right? But take a look at it in its habitat. It's actually pretty well hidden. Or take a look at this bright green butterfly. When you see it in its

habitat, it seems to blend right in with all the leaves. Colors like this are called camouflage. Camouflage colors help butterflies disguise themselves by blending in with their surroundings, which makes it harder for predators to find them. But not all butterflies have colors that help them blend in. They may have bold spots or bright stripes that make them stand out. But wouldn't these colors make them easy targets for a predator? What's going on here? Why do you think some butterflies have bright colors and patterns that stand out instead of being camouflaged? Now would be a good time to pause the video and discuss. Okay, you ready?

Rather than having camouflage colors to help them hide or blend in with their surroundings, some butterflies have patterns that might startle or scare a predator, like this butterfly. The spots on its wings look just like the eyes of an owl, an owl that might eat the kinds of birds that eat butterflies. So these patterns help protect butterflies by startling or scaring predators away. Still, there are other butterflies that have bold colorful patterns for another reason, like this one. It doesn't look like something that would scare a bird. Scientists have studied this butterfly, a long-tail butterfly, and figured out it's poisonous to birds. If a bird tries to eat a poisonous butterfly, it'll taste bad and sometimes make the bird sick. So birds quickly learn to avoid butterflies like this. Their bright colors act like a warning signal. Here are two other butterflies that signal to predators with bright colors. The one on the left is a monarch, it's highly poisonous to birds. The one on the right might look like a monarch, but it's a different kind of butterfly called a viceroy. It's actually not poisonous, it just looks like it is. Many butterflies that aren't poisonous have warning colors that mimic butterflies that are poisonous. If predators can't tell the difference, they'll leave them both alone.

So in summary, butterflies can be brightly colored for a lot of different reasons. Some of them, while it seems like they'd stand out, they're actually well camouflaged in their habitats. Others have colors that will scare away predators either by looking like other animals or having warning colors to let predators know that they're poisonous.

That's all for this week's question. Thanks, Malia, for asking it.