Mystery science

Grades K-5
Mini-Lesson: “Why do flies just appear in the trash?”

VIDEO TRANSCRIPT

VIDEO 1

Hi, it's Jay! I want to share a mystery that I've wondered about for years. When I was a kid, I went fishing with my dad and grandpa. We were out on Lake Michigan with nothing but water all around. When suddenly flies swarmed our boat, these were the kind of flies that usually buzz around trash cans. We had no idea where they came from and it's still a mystery to me. Someone named Caleb has another mystery about flies. Let's give Caleb a call now.

[Video Call]

- Hi, Jay!

- Hi, Caleb!

- I have a question for you. Why do just flies appear in the trash can?

- That's a great question and a great mystery—I'll call it "The Case of the Overnight Flies."

Ready detectives? It's another hot summer day. The sun beats down on the kitchen trash and you get a whiff. Ew, better empty it soon. But first breakfast, you grab a banana and go to throw away the peel. But when you lift, the trash can lid, a swarm of house flies comes buzzing out. Your whole family is confused. No one saw any flies earlier. The grownups are certain the trash can was closed when they went to bed and when they got up this morning. But if the trash was

closed, how did the flies get inside? Did they just appear overnight? I'm curious as to what you think happened. How did flies appear inside a closed trash can?

VIDEO 2

I'm not sure how you answered, but maybe you thought if you stayed up all night watching the trash can, you could have seen the fly sneak inside. You're on the right track. Let's take a peek inside. No flies yet, but there is something strange in the trash. These dark oval-shaped things, maybe they're a clue. Hours go by, still no flies. But then you notice this. One of the dark things has cracked open and something is coming out. What is that? It's hard to tell at first, but eventually, they all crack open and you see flies. Whoa, the house flies you saw in the morning came from those dark things. But how did the dark things get in the trash? Let's go back in time a few days and check out the trash again. No flies and no dark things, but I see something moving. Here's a closer look. It's these little wiggly creatures, another clue. Over several days, the wiggly creatures grow bigger. Then they stop moving and start changing color. Wait, does that look familiar? They turned into those dark things. So the house flies came from the dark things and the dark things used to be wiggly creatures. But how did the wiggly creatures get in the trash? Let's go back in time again, a few more days. Uh-oh, someone left the trash can open, and the house fly is landing inside. Is that one of the flies you saw at breakfast? No, it's flying away. I guess not. But it did leave behind a clue. This pile of tiny white things. Weird. The tiny white things don't move and not much happens for hours. But then they split open and these wriggle out. Hey, it's the wiggly creatures. So the house flies came from the dark things and the dark things used to be wiggly creatures and the wiggly creatures came from the tiny white things and we just saw how the white things got in the trash. A fly put them there. We've been going back in time, but now, let's put these clues in order. The mystery actually started

over a week ago when a house fly visited the trash. It left behind a pile of tiny white things. Next, wiggly creatures came from the tiny white things. Then, the wiggly creatures grew and changed into dark things. And finally, flies came out of the dark things and flew around when you opened the trash at breakfast. I think we've solved the mystery. The flies didn't just appear in the trash overnight. They were already inside for over a week, starting at those tiny white things, and maybe you can guess what those are. They're fly eggs. House flies lay their eggs in places with plenty of food for their babies. They love mushy rotten things, so our trash is perfect. Those wiggly creatures that hatch from the eggs are baby house flies. Another name for them is larvae. You probably notice that they don't look anything like adult house flies. So how do they go from these wiggly creatures to having wings and legs? Well, remember when the larvae turned into that dark thing? At that stage, it isn't a baby or an adult. Instead, scientists call it a pupa. Its body makes a hard shell. Inside, it goes through a huge change. Then comes out as an adult. All these changes the house flight goes through after it hatches, from larvae to pupa to adult, are a process called metamorphosis. If that sounds familiar, it's because some other animals also go through metamorphosis, like butterflies. We have a lesson about it if you're curious to find out more. So it turns out those house flies went through the entire process of metamorphosis, starting with hatching from an egg to a larvae to a pupa to adult in less time than it took to empty the trash. That's amazing! Animals and plants are living out their lives all around us. Some change so fast and some change so slow that you might not even notice. By taking time to look closely at places you normally ignore, you may uncover clues to how living things grow and change, even in the trash. That's all for this week's question. Thanks, Caleb, for asking it!