Lesson: “Why do birds have beaks?”

VIDEO TRANSCRIPT

EXPLORATION VIDEO 1

Hi, it's Doug! Do you have a favorite animal like this girl has here? Sometimes people ask me what my favorite animal is and it's always so hard for me to say. I like turtles a lot. But the more I learn about animals, the more amazing animals I find out about. Like when I first became a science teacher, I got a pet chameleon like this. Now check this out. Look at how chameleon's eyes move. It can look in all directions. And when a chameleon walks, they look so strange. Those feet they have are actually better suited for gripping onto tree branches than walking on the ground. But my favorite thing about my chameleon was this. When you put an insect in there with it, like a cricket. That's maybe a chameleon's favorite food. Watch what it does. Oh, wow! Now let's watch it one more time in slow motion. You see that? A chameleon's tongue is longer than its own body. Now, look at this little animal. It's a fish. But not all fish are the same. This one is called archerfish and you've got to see what it can do. It's a little hard to tell, but there is a bug on the branch up here. Okay, watch what happens. Oh, did you see that? Watch it again. It squirted water out at the bug and then when the bug fell into the water it went up and ate it. Wow! Over the next few Mysteries, we're going to see lots of interesting animals. One of the things I want to convince you of is that it's almost as if animals have superpowers. Some of them are able to do amazing things. Animals don't do amazing things just to impress us though. Notice how these animals we just saw, the chameleon and the archerfish, were doing amazing

things in order to get food. One of the needs that all animals have in common. There isn't just one way to get food though. Different animals have different ways of doing it, sometimes involving special body parts. The chameleon has a tongue that's really sticky and really long. The archerfish has a mouth that can act like a hose or a faucet spraying water in a little jet. This is one way to think about animals. Whenever you see an animal, ask yourself, does it have any special parts it uses to get food. Let's look at a few other animals and see what parts they use.

EXPLORATION VIDEO 2

It's interesting to watch how wild animals get their food. Sometimes it can be hard to find wild animals to watch in your neighborhood, though. But I'll tell you one group of animals that I bet you can see lots of, no matter where on earth you live—birds. If there's one thing birds do that's like a superpower it's the fact that they can fly. But that's not the only thing that's amazing about birds. Think about how birds solve the problem of finding and grabbing food. They don't have any hands. They don't even have teeth. A bird has to use its beak to get food. And there are so many different kinds of beaks—beaks like this, and this, and this, and this. Huh. Look, there's not just one kind of bird beak. Bird beaks are all sorts of different shapes and sizes. Why are they different? That's what we're going to explore in today's activity. Why do bird beaks have such different shapes and sizes? Like, look at these two. Both of these are birds you might be able to find living near you. This is a little bird you might find near your house. It's called a warbler. And this is a water bird you might find near a pond or a lake. It's a duck. How are these beaks different?

ACTIVITY INTRODUCTION VIDEO

In today's activity, you're going to pretend to be a hungry bird, and you're going to eat with a beak. You'll get two different kinds of beaks to experiment with. You'll get a pointy beak, like a warbler has. It's made out of a drinking straw, but it can pinch closed like a warblers bill. You'll also get a wide, flat beak—quack, quack—like a duck. It's made out of a paper cup. The food you'll be eating will look something like this. It's pretend food, but that's okay because your stomach is a cup. You'll hold your beak in one hand and your stomach in the other, and you'll use your beak to put food in your stomach. Now, you can only use your beak! It’s no fair using your other hand to help. Okay, are you ready to be a bird? I'll walk you through the activity, step by step.

ACTIVITY STEP 1

If you're in a class, form a group of four. If you're at home, you experiment by yourself. When you're done with this step, click the arrow on the right.

ACTIVITY STEP 2

Go to a test area. It might be a square marked on the carpet like this or a towel laid on the floor. If you're in a group, each person sits on a different side of the square. Don't sit in the square.

ACTIVITY STEP 3

Get these supplies. You'll get more later.

ACTIVITY STEP 4

Scatter bird food in your test area. Spread it out so it fills the whole square.

ACTIVITY STEP 5

Pick up the pointy beak, like this. In your other hand, hold the cup. That's your stomach. Use the beak to put food in your cup. Once you're done practicing, go to the next step. You don't have to pick up all the pieces.

ACTIVITY STEP 6

Dump the food back into the test area and pick up the other beak. Use it to put food in your cup. What's the best way to get food? Experiment and talk with your partners to figure it out. There are many ways to pick up food with this beak.

ACTIVITY STEP 7

Discuss.

ACTIVITY STEP 8

Now you're going to change your test area. Each test area gets a cup of beans. You're going to pretend these beans are rocks. Scatter beans with the food, mix them up.

ACTIVITY STEP 9

Your bird wants to get the food, but it doesn't want to fill its stomach with rocks. Try using each beak to get food. Which beak is better at getting food without getting rocks?

ACTIVITY STEP 10

Do number one on your worksheet, then go to the next step. Don't forget to write your name on your worksheet, too.

ACTIVITY STEP 11

You'll have 20 seconds to get food with the beak you chose. If you get a rock, spit it out. Are you ready? Go!

ACTIVITY STEP 12

Count how many pieces of food your beak got. Do number two on your worksheet.

ACTIVITY STEP 13

Discuss these questions. Then advance the slide to watch the final video.

WRAP-UP VIDEO

Lots of small birds have narrow pointed beaks like this. These beaks act like tweezers picking something small out of a crowded space. Beaks like these are really good at getting seeds out of a bunch of rocks like these crows are doing here. Or this bird—it uses its small pointed beak

to pick insects off of the ground. Or check out this bird—it's a finch. It uses its beak to pick seeds off of this plant. So these beaks are good at picking small bits of food out of a crowded space. What about the other big shape you tried in the activity, the beak that ducks have. It's a wide, scoop-like beak. It's hard for this beak to pick seeds out of a bunch of rocks. But that doesn't mean that this isn't a good beak. This beak is just good at something else. Did you get your paper duck beak to scoop up lots of food at once like this? Well, that's what a duck beak is good for. If you watch ducks eat, you can see that they use their beaks like a spoon. They can scoop up lots of plants on the water all at once. Here are some ducks eating out of a bowl almost like eating cereal. These birds don't mind if they accidentally scoop up some of the water too, they'll just drink that. It's kind of like how we eat cereal. We use a spoon to scoop it up. You're okay with having a little milk in there. But imagine trying to eat cereal with a pair of tweezers. Now that'd that be silly! So duck beaks are good at some things and warbler beaks are good at other things. The shape and size of a bird's beak tells you something about how the beak works. You can look at a bird's beak and make a pretty good guess about what a bird eats. Warblers pick insects or seeds with their beaks like a pair of tweezers. Ducks scoop up pond plants like a spoon. But these aren't the only kinds of beaks. Look at the beak of this, a pelican. What does the shape and size of its beak tell you about what it eats? Well, let's watch. Here's a person throwing a fish to a pelican. Woah! Did you see that? Or check this out. Here's a pelican diving its head into the water. Watch what it does. It's almost hard to believe this but a pelican uses its beak like a fishing net. Its beak is so big and stretchy it can dive into the water after a school of fish, and either grab lots of fish at once or in this case, you can see, it used it to catch a pretty big fish. Now, what about other beaks? Have you ever seen this bird? It's a hummingbird. It has a long beak, like a straw, which is perfect for what they eat. Hummingbirds can use their beaks to reach deep into flowers and slurp some of the sugary nectar that's found

inside of every flower. Now, what about a flower that's this long and narrow though? No hummingbird could reach its beak into that, right? Well, this is actually no problem for this hummingbird. The sword-billed hummingbird. It has the longest beak of any hummingbird. Watch it use its beak to eat. And there are even more types of bird beaks you can find when you go look for birds. We'll give you some tips in the Extras for ideas of what to look for. Have fun and stay curious!