mystery science

Grades K-5
Mini-Lesson: “Which animal has the biggest heart?”

VIDEO TRANSCRIPT

[Video Call]

- Hi, Doug!

- Hi, Husam!

- I have a question for you. Which animal has the biggest heart?

- That's a great question.

You probably heard a lot about human hearts, but what about animals? Do all animals even have hearts? Well, most do, but they don't always work or look like ours. Like, check out this octopus. Here's a drawing of what an octopus looks like on the inside. You notice anything? An octopus doesn't have just one heart. It has three hearts. One heart pumps blood to its body, and the other to pump blood to its gills so that it can breathe underwater. And get this: its blood is blue. And see this starfish? It doesn't even have a heart at all. Whoa, wait a second! Is that even possible? Don't animals need a heart to stay alive? Well, it's true that most animals need a heart. A heart pumps blood to all the different parts of an animal's body. And that's hugely important because blood carries oxygen and nutrients that an animal's body needs to survive. So what about a starfish then? Don't their bodies need oxygen and nutrients, too? They do, but instead of a heart to pump blood, starfish have tiny hairs called cilia throughout their body that swish back and forth constantly, swishing around the oxygen and nutrients that their bodies

need from the water around it. So, as far as animal hearts go, starfish, with no hearts at all, might be some of the most unusual. But of the animals that do have hearts, which animal has the biggest heart? Before I say anything more, what do you think? Now would be a good time to pause the video and discuss.

Okay. You ready?

I'm not sure how you answered, but I'm guessing your answer depended on whether you were thinking about land animals or animals that live in the ocean, or maybe even you thought of extinct animals like dinosaurs. For example, if you were thinking about land animals you might've thought of a giraffe. A giraffe doesn't have the biggest heart, but it definitely has one of the strongest. See how the left side of its heart is thicker than the right side, that's muscle. It turns out the left side of a giraffe's heart is the part in charge of pumping blood all the way up, its super long neck to its brain. So that part of its heart needs to be super strong, that's why it's bigger. And what about elephants, they must have a huge heart, right? They do, in fact, an African elephant has the biggest heart of all living land animals. Its heart needs to pump blood all over its huge body. Well, our human hearts only weigh about, as much as two apples. An elephant's heart can weigh as much as a child, your size. But well, an elephant's heart is really big, it doesn't even come close to being the biggest heart of all. No, for that, we would have to consider other types of animals, maybe animals that don't exist anymore, or maybe animals that don't live on land. Hmm, so which animal could that be, could it be this Argentinosaurus, one of the biggest creatures ever? Or maybe it's an extinct reptile that lived in the ocean like this massive plesiosaur? Actually, it's neither though we do need to consider ocean creatures like the plesiosaur. The largest heart belongs to an animal that is still alive, the largest creature that

has ever lived on earth, the blue whale. For a long time, scientists actually had to guess how big a blue whale's heart was. They hadn't actually seen it's heart. And since blue whales are the biggest creatures, scientists guess, that their hearts must be the biggest too, maybe even as big as a car but they didn't really know for sure. Here's the problem: when they die, they sink to the bottom of the ocean. So scientists could never find a blue whale's heart to study. But then this happened: a dead blue whale happened to wash up on a beach in Canada. Even though I'm sure some of the scientists were sad that the whale died, they rushed to the beach to study its heart. And what they found was amazing. The whale's heart was so big, the biggest heart anyone had ever seen, it weighed 440 pounds and it was huge. A blue whale's heart is big enough that a small child could literally crawl through one like these kids are doing with this life-sized model in this museum. A blue whale's body itself is huge. It's as long as two school buses lined up next to each other. I mean, it's so huge that its tongue alone can weigh as much as an elephant. So it takes the biggest heart in the world to pump all that blood to every part of its body.

So in summary, most animals have hearts like we do but they don't always work or look like ours do. Though all hearts pump blood, animal hearts come in different sizes depending on the size of the animal. And since the blue whale is the largest animal that's ever lived, it makes sense that its heart is the biggest too.

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