mystery science

Grades K-5
Mini-Lesson: “What’s the largest flying animal?”

VIDEO TRANSCRIPT

VIDEO 1

Hi, it's Jay. Have you ever wondered what it feels like to fly? A few years ago, I got a chance to find out. That's me up in the sky, and this is my expert pilot. The thing we're strapped into is called a paraglider. To take off, we ran as fast as we could. Just when it seemed like we'd run right off the edge of a cliff, I realized we were floating. It was awesome. Someone named Isaac has a question about things that fly. Let's give Isaac a call now.

[Video Call]

- Hi, Jay!

- Hi, Isaac!

- I’ve got a question for you. What's the largest flying animal?

- That’s a great question.

When you think about animals that can fly, you might think of a fly. Flies are one kind of flying insect. You've probably seen others, and most aren't very large. But check out this Atlas moth. Its wings can measure ten inches across or more. That's nearly an entire ruler. That makes it one of the largest flying insects. But we can go larger with another kind of flying animal: bats. Some are so large that scientists call them megabats. Their wings can measure over five feet across. That's nearly as wide as when I spread out my arms. But we can go even larger. Let's talk birds. You might know that the tallest and heaviest bird alive today is the ostrich. But these

are birds that can't fly, so they're disqualified. When it comes to birds that can fly, largest depends on how you measure. Take the Andean condor. If you measure by height, they can be an impressive four feet tall. That's past my elbow. But if you measure by wingspan, going from the tip of one wing to the other, they're even larger. Andean condors can measure an amazing 10 feet across their wings. That's wider than an ostrich is tall. If we go by height, the tallest flying bird might be the sarus crane. Some are nearly six feet in height. That's taller than me. But if we go by wingspan, an albatross probably wins. There are different kinds of albatross, but the biggest can measure a whopping 11 feet or more from wingtip to wingtip. That's like two of me! That might make this albatross the largest flying bird. But wait, we want the largest flying animal of all animals, right? Besides insects, bats, and birds, another kind of flying animal once lived on Earth, and some were really large. But just how much larger could an animal be and still fly? I'm curious what you think.

VIDEO 2

If you could go back in time millions and millions of years, you would find another kind of flying animal. Some may have looked like this. These might seem like dinosaurs, but they're a different type of animal. They're pterosaurs. You may have heard them called pterodactyls before. There are no pterosaurs alive today, but we have clues to how they flew thanks to fossils like these. See the bones sticking out on each side? You can probably guess that these were part of their wings. And check out this long group of bones here. Believe it or not, those bones are similar to your finger bones. Imagine having one extra-long finger. But there's something you can't see just by looking at fossil bones. A pterosaur would have also had a thin flap of skin that stretched between its super-long finger down to its leg. It may have been a bit like a bat's wing, like this. You can see the thin stretchy part here, supported by the bat's bones inside. When a

bat flaps its wings, that thin part pushes against the air to help a bat fly and glide. Pterosaur wings probably did something similar. Just how large did some pterosaurs get? Take a look. This is a Quetzalcoatlus, one of the largest pterosaurs ever found. Standing on the ground, it was roughly 16 feet tall. That's about as tall as a giraffe. Its wings were even more massive. Stretched out, they may have been 36 feet across. That's the length of a school bus or some paraglider wings. These pterosaurs were so large, scientists weren't sure they could actually fly. Maybe they were like ostriches and stayed on the ground. But after carefully studying their fossils, many scientists think that large pterosaurs could fly. They would just have needed extra power to take off. Watch how this bird takes off. It lifts its wings, crouches down, then pushes off with its legs. Let's watch that again. It basically jumps into the air to start flying. And watch this bat. See how it pushes off with its legs and part of its wings? Here it is again. Wow. Some scientists think pterosaurs did something similar. By using its legs and wings to push off, a large pterosaur could have launched from the ground and into flight. Imagine seeing a pterosaur like this in the sky. It would be the size of a small plane—a very strange-looking plane. So, in summary, there are three main kinds of flying animals on Earth today: insects, bats, and birds. There are some big flying insects and bigger bats, but the very biggest fliers are birds, like the massive Andean condor, the extra tallosaurus crane, and the wingspan champ, the albatross. They win for largest flying animals alive today. But if we include animals from the past that aren't alive today, there's no contest. The pterosaur called the Quetzalcoatlus is the largest flying animal to ever live on Earth…at least, that we know of. There are other pterosaurs being studied that may have been just as large, and who knows what new fossils we might uncover someday. That's all for this week's question. Thanks, Isaac, for asking it.