mystery science

Grades K-5
Mini-Lesson: “How do jellyfish sting?”

VIDEO TRANSCRIPT

VIDEO 1

Hi, it's Doug! I want to show you something. This is a purple-striped jellyfish. Pretty cool, right? Jellyfish are some of the ocean's most beautiful and graceful creatures, but even though they look soft and gentle, a lot of jellyfish actually have a powerful sting. Someone named Crystal has a question about jellyfish. Let's give Crystal a call now.

[Video Call]

- Hi, Doug!

- Hi, Crystal!

- I have a question for you. How do jellyfish sting?

- Ooh, I wonder that myself, and I know just the person to answer this question.

Her name is Esther Ikoro. She's an explorer who loves learning about wild creatures. And she's really good at noticing interesting things about them, too. Esther's going to be joining me this year in answering your questions, so you'll see her around a lot. Let's give Esther a call now.

- Hey Doug, I heard you had a question about jellyfish.

I do. Crystal wants to know: How do jellyfish sting?

- That's a really interesting question. Okay, so jellyfish look squishy and harmless, but all the things that make them so soft and gentle are actually the reason they need to sting. If you look closely at a jellyfish, you can see that they don't have a lot of the things that other animals have to protect themselves or hunt for food. They don't have hard shells like a sea turtle or sharp teeth like a great white shark. Jellyfish don't even have bones or a brain. Their soft, simple bodies make it hard for them to catch food and keep predators from eating them. That's why jellyfish sting. It's how they capture prey and protect themselves. You can probably think of other animals that sting for the same reasons, like bees, or wasps, or scorpions. But unlike a wasp, which has a pointy stinger that sticks out from the end of its body, or a scorpion, which has a big stinging tail, the way a jellyfish stings is hard to see. So before we go any further, I want to know: How do you think jellyfish sting?

VIDEO 2

To help us find the answer to this question, let's take a closer look at the parts of a jellyfish's body. Most jellyfish are made up of two main parts. The first part is the bell, which is the part of the jellyfish that's kind of shaped like an umbrella. The muscles inside the bell power the jellyfish's movement, helping it pulse through the water. The second part is the tentacles. Jellyfish tentacles trail behind their bell in the water. These tentacles can look really different on different kinds of jellyfish. Some jellyfish have short and stubby tentacles, like this blubber jelly. Some are colorful, like this Pacific sea nettle. This jellyfish, called the lion's mane jelly, has tentacles that can grow over 100 feet long. That's longer than a blue whale or three school buses put together. Now, jellyfish tentacles may look like they don't do very much, but that's actually the part of the jellyfish that stings. If you take a close look at a jellyfish's tentacle with just your eyes, you won't actually see anything that can sting, and for a long time, scientists

didn't know how this worked. But once the microscope was invented, then people were able to take an even closer look at jellyfish tentacles and what they found was really surprising. Check this out. What they found was that there are lots of tiny little darts inside of a jellyfish tentacle. Those darts contain venom. And when something brushes against the jellyfish, the darts automatically fire and inject venom into whatever's nearby. If a jellyfish brushes up against something it likes to eat, the venom stuns the creature so the jellyfish can eat it before it gets away. Now, not all jellyfish sting, and most of the ones that do sting are harmless to humans. But some jelly stings can be painful or itchy and a few are actually dangerous. The most venomous jellyfish in the entire world is called a sea wasp. The sea wasp is so deadly that its sting can stop a human heart if the person doesn't get medical help quickly enough. But are jellyfish the only sea creatures who sting from their tentacles? Turns out lots of other creatures sting this way. Take a look. This is coral. They look like plants, but they're actually animals. In fact, corals and jellies are relatives. They're both in a group called cnidarians. Corals live underwater, attached to rocks on the sea floor. They have a body on the bottom and tentacles pointing upwards into the water. Just like jellyfish, coral's tentacles also release venomous darts to catch food. So corals are kind of like upside-down jellyfish. Try this, extend your hand with your palm and fingers pointing down like this. Imagine your hand is a jellyfish with your palm as the bell and your fingers as the tentacles. Now wiggle your tentacles like they're waving in the water. Next, flip your hand upside down like this. Now your hand is like a coral, with a body on the bottom and the tentacles pointing upwards. It's the same structure, just facing different directions. And when jellyfish are babies, they look even more like corals. This is a baby jellyfish. At this age, baby jellies attach to the sea floor and catch plankton with their stinging tentacles pointing upwards, just like corals. But wait, there's more. Many other cnidarians, like sea anemones and hydras, sting too. So in summary, even though jellyfish look like they're the

most gentle animals in the sea, they're actually part of a whole group of beautiful sea creatures that use their tentacles to sting. Cnidarians, which include jellyfish, corals, and other creatures, release tiny venomous darts from their tentacles to catch food. They're pretty to look at, but they also know how to get what they need. That's all for this week's question. Thanks for asking, Crystal!