

SHARKS! AND THE FOOD CHAIN



Dr. Adrian Gutteridge is a surfer and marine scientist who knows all about sharks!

Students have been asking Dr Adrian their shark questions.

What is a shark?

A shark is a fish in the class called elasmobranchs. 'Elasmos' include all sharks, skates and rays. What they all have in common is that, compared to normal fish, they are generally slow-growing, late to mature and have fewer offspring. They all reproduce through internal fertilisation, which differs from normal fish that release their eggs and sperm into the water. Sharks have been around for around 200 million years, relatively unchanged. So they basically arrived into the fossil record and have been dominating the oceans for ages.

How many species of sharks are there?

There are around 600 species of shark in the world's oceans, with some species being as BIG as a school bus (like whale sharks) or smaller than a 30cm ruler (like a dwarf lantern shark).



What do sharks eat?

Tiger sharks probably have the broadest diet of any shark and pretty much eat anything. As well as eating things like fish and rays, they also eat turtles (they saw them in half!) and diet studies have found things in their stomachs including fruit bats, birds and number plates.

Why are sharks important to the ecosystem?

Sharks are a top marine predator, which means that almost no other animals eat them. They are like the lions of the sea, which means that they help to keep the populations below them in the food chain in check. Without sharks, the populations of marine species lower down the food chain (such as seals) can expand, and put pressure on the species even lower in the food chain (such as fish). If some species get depleted, the whole food chain can collapse. Sharks help keep the food chain balanced, and a well stabilised ocean food chain in turn provides food for billions of humans and jobs for hundreds of millions.



What are some surprising facts about shark biology?

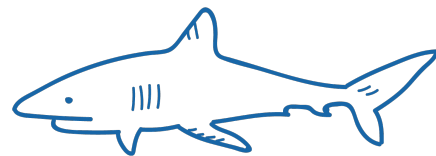
Most sharks give birth to live young. This can range from 1 or 2 pups to up to 20-30. In some species, like the grey nurse shark, they have intrauterine cannibalism. This means they start with about 5 pups in each uterus, but the biggest ones eat each other until only one is born from each uterus! Sharks don't have scales they have 'dermal denticles'... sort of like teeth on their skin. Their denticles feel smooth from nose to tail but rough like sandpaper the other way. This makes them extremely hydrodynamic and it inspired swimsuit design for elite swimmers.

What is the weirdest kind of shark?

Cookie-cutter sharks are pretty cool. They are a small-bodied shark that lives in the open ocean. They have the biggest teeth relative to the size of their jaw of any shark. They bite onto whales and bigger fish, spin their body and take a circular chunk of flesh out. They are also bioluminescent. Rad.

How can we be more shark aware?

If you're going to go surfing, swimming or do anything in the ocean, don't stuff pilchards down your pants. Sharks eat pilchards. How can we protect sharks? Buy seafood products from well-managed fisheries, including ones certified with the MSC blue fish tick, that do their best to reduce bycatch of sharks and rays. Don't eat shark fin soup, as these shark fins are typically from illegal and unregulated fisheries. Shark finning is one of the biggest threats facing many shark species.



Test your knowledge:

- Answer: the questions (next page)
- Take the Kahoot Quiz "[Wickedly Amazing Sharks!](#)"
- Listen to Adrian answer shark questions on this [Squiz Kids 'Sharks' interview](#)



QUESTIONS

How well did you read?

Use the 'Sharks! and the Food Chain' factsheet to help you fill in the worksheet below.

(1) Select the most correct words to fill in the gaps. Sharks all reproduce through _____ fertilisation, which differs from normal fish that release their eggs and sperm into the _____.

- a. internal, air
- b. external, sunshine
- c. internal, water
- d. external, moon

(2) True or false? Sharks have been around for around 200 million years

- a. True
- b. False

(3) There are around _____ species of shark in the world's oceans.

- a. 10
- b. 600
- c. 3
- d. 2,000

(4) What do tiger sharks eat?

- a. Pretty much anything
- b. Only fish
- c. Other sharks
- d. Not much

(5) Select the most correct words to fill in the gaps. Sharks are a _____ marine predator. Sharks help keep the food chain _____.

- a. Poor, unbalanced
- b. Good, out of balance
- c. Bottom, uncertain
- d. Top, balanced

(6) True or false. "Sharks don't have scales they have 'dermal denticles'... sort of like teeth on their skin."

- a. True
- b. False

(7) Select the untrue statement. Cookie cutter sharks are...

- a. Can bite out circular chunks of flesh
- b. Are always a bluey purple colour
- c. Bioluminescent
- d. Have big teeth



FOR TEACHERS

ANSWERS

- (1) ANSWER: c.
- (2) ANSWER: a.
- (3) ANSWER: b.
- (4) ANSWER: a.
- (5) ANSWER: d.
- (6) ANSWER: a.
- (7) ANSWER: b.