

Name: \_\_\_\_\_

Date: \_\_\_\_\_

# Whale Sharks: Male or Female

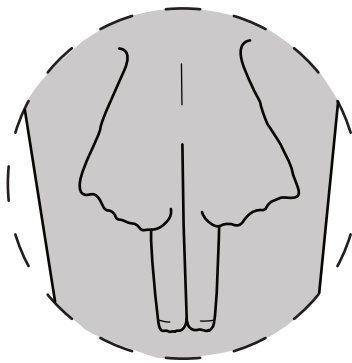
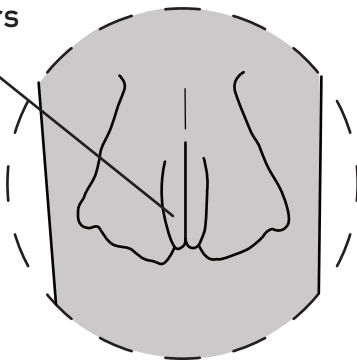
Sometimes it can be hard to identify if a whale shark is male or female. The only way to be sure is by looking under the whale shark. A mature male has claspers longer than their pelvic fins, while an immature male has claspers that do not extend beyond their pelvic fins. The female whale shark has pelvic fins and no claspers. Identify whether the individual below is a mature male, immature male, or female.

Mature Male

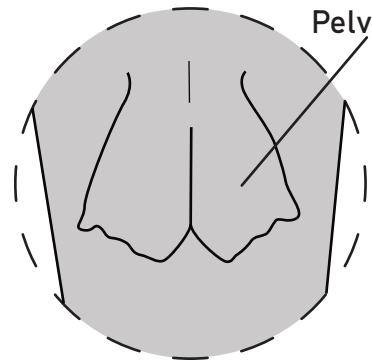
Female

Immature Male

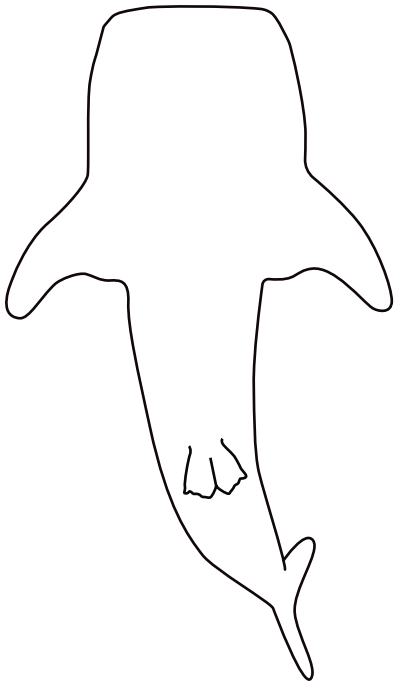
Claspers



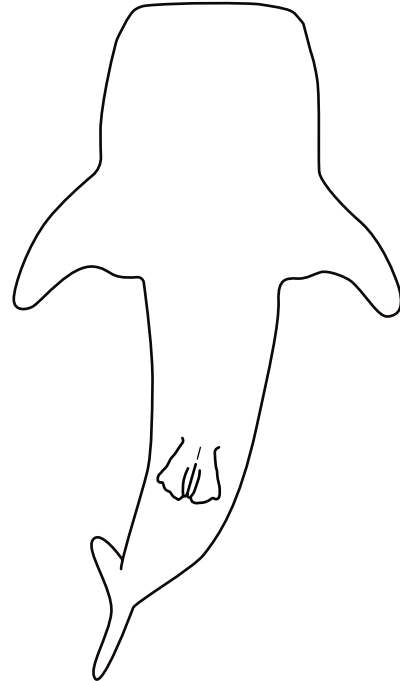
Pelvic Fins



1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_



4. \_\_\_\_\_



5. \_\_\_\_\_

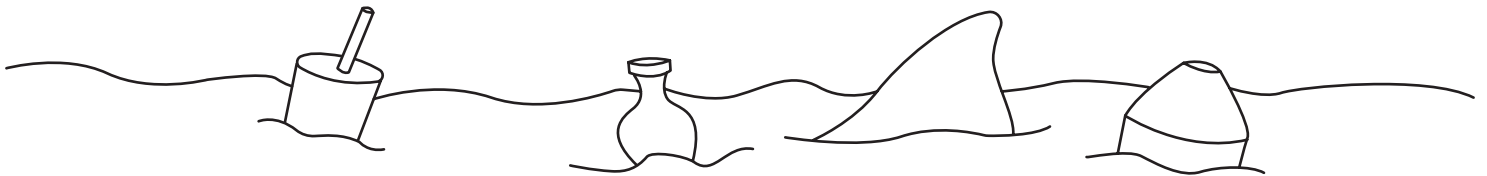
Name: \_\_\_\_\_

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# Whale Sharks are classified as:

# ENDANGERED

Whale sharks (*Rhincodon typus*) are at a risk of becoming extinct, which means they may no longer exist in the future. The threats to whale sharks are caused by fishing, bycatch from fishing, and pollution. Whale shark meat is still considered valuable in some cultures, which means people fish for them to eat. Like many sea creatures, whale sharks are also caught accidentally when other species are targeted; this is called bycatch. Pollution is an increasing problem in the ocean. A majority of the ocean's pollution is from human activity such as trash and toxic runoff. The pollution in the ocean affects all sea creatures and eventually it may affect you, too!



## How to REDUCE your impact

The most effective way you can help is through **reducing** your impact. A common example of reducing is using plastic free alternatives such as stainless steel water bottles or reusable shopping bags. Another way you can help the ocean is by conserving water. The less water you use, the less runoff ends up in the ocean. For example, a 5 minute shower is healthier for the ocean than a 10 minute shower!

**Please write 2 NEW examples on how you can reduce your impact:**

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# Diet

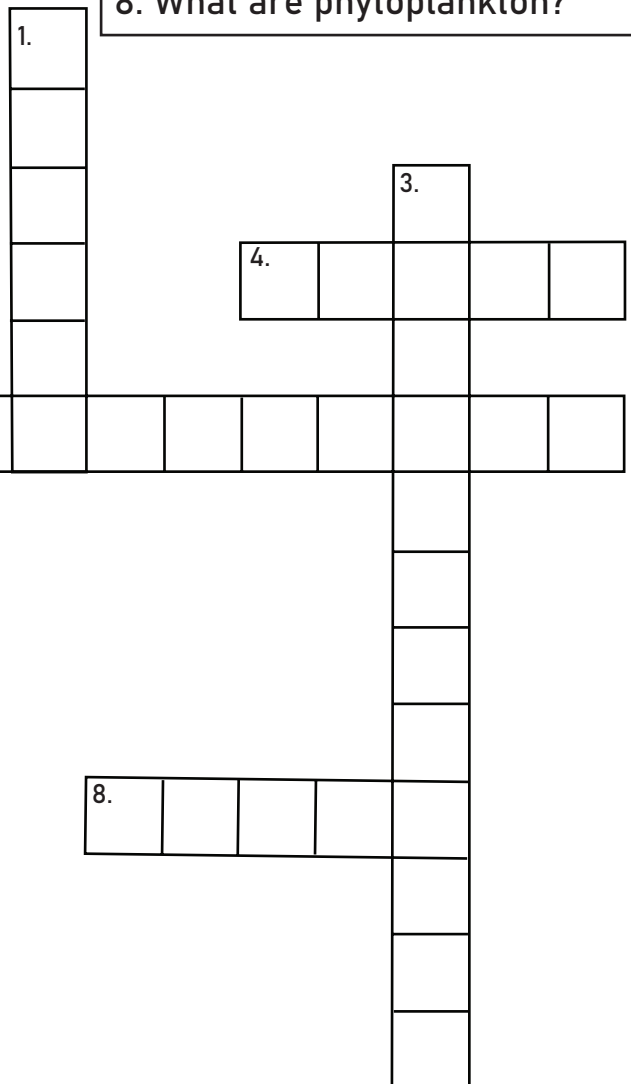
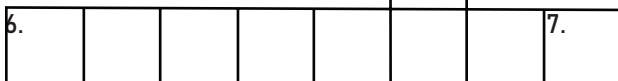
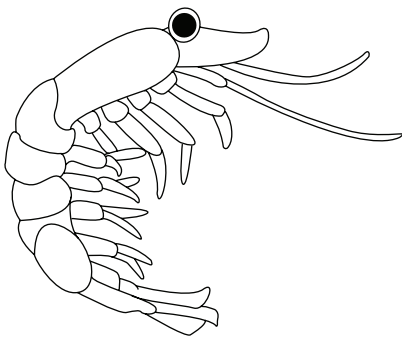
When a whale shark is feeding, they swim with their mouth open and vacuum in the food along with water. Filter pads lining the inside of the whale shark's mouth and gills filter out the water and collect the food for feeding. This means whale sharks are filter feeders. Whale sharks' diet consists of tiny creatures such as zooplankton, phytoplankton, and small marine creatures. Zooplankton are small drifting creatures such as krill, shrimp, and copepods. The phytoplankton are microscopic marine algae grown in sunlight. Whale sharks also like to eat small fish such as sardines, mackerel, and even squids!

## Down:

1. Crustacean similar to krill but bigger
2. Small drifting creatures
3. Creatures who collect food while filtering out the water are called a:
7. These creatures have 8 arms and 2 tentacles

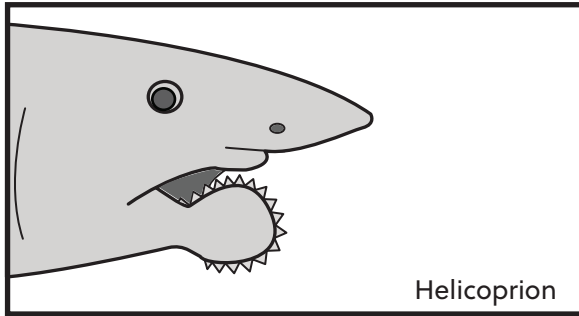
## Across:

4. A small shrimp-like plankton
5. Microscopic algae
6. Small fish (hint: not mackerels)
8. What are phytoplankton?



# Extinct Prehistoric Sharks

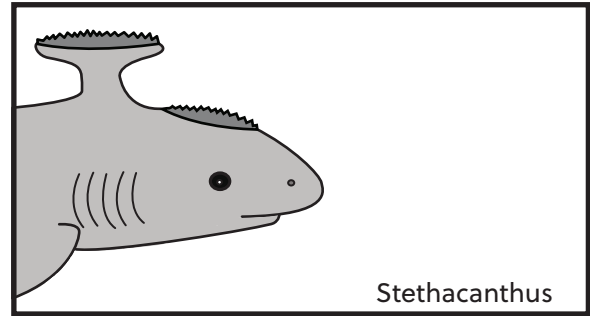
Shark skeletons are made from cartilage, which is flexible connective tissue, similar to a human ear. Since cartilage is not made of calcified bone, the shark's skeleton is less likely to fossilize, making it harder for paleontologists to identify prehistoric sharks.



Helicoprion

## Helicoprion

Helicoprion fossils were first identified from their unique teeth pattern. Scientists have discovered that these shark-like fish have whorled teeth located on their lower jaw. Comparing the size of their teeth, scientists believe these sharks grew to around 20 feet long.

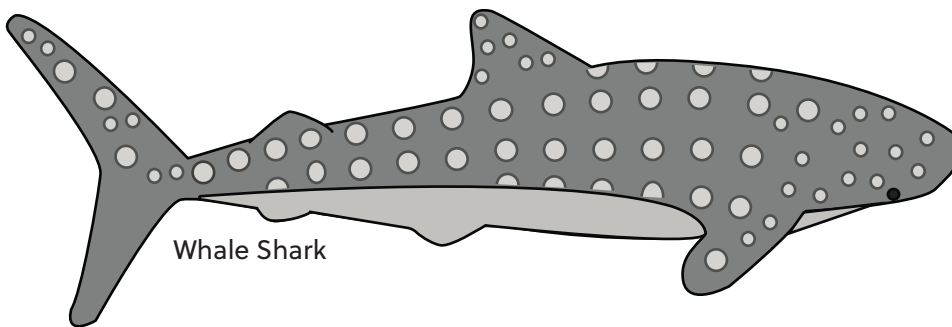


Stethacanthus

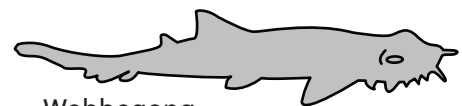
## Stethacanthus

The dorsal fin on the Stethacanthus was flat on top with small spikes. The sharks grew up to 2.5 feet long, and were likely bottom-dwelling. The unique dorsal fin is thought to have functioned to attract potential mates.

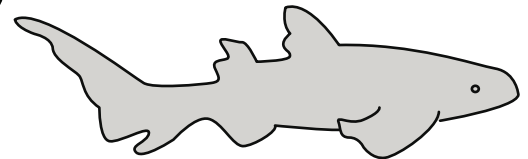
# Extant Carpet Sharks



Whale Shark



Wobbegong



Nurse Shark

Carpet sharks (Orectolobiformes) are sharks of varying sizes, behaviors, and diets. The wobbegongs are bottom-dwelling ambush creatures, usually preying on reef creatures. Their average size is 4 feet long. Nurse sharks are slow swimmers and often can be found resting on the ocean bottom. They have rounded pectoral fins and dorsal fins and average 10 feet in length. They are opportunistic suction feeders. Whale sharks are large, docile sharks that grow to 25-30 feet in length on average. They are filter feeders that feed on large quantities of very small plankton and small fish.

Name:

Date:

1. From biggest to smallest, label each shark by their size: \_\_\_\_\_

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2. What are three similarities between extinct sharks and extant sharks?

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3. The kind of food extinct sharks may have eaten are: \_\_\_\_\_

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4. What are some unique characteristics in extinct sharks that are not found in extant sharks? What do you think they were used for? \_\_\_\_\_

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