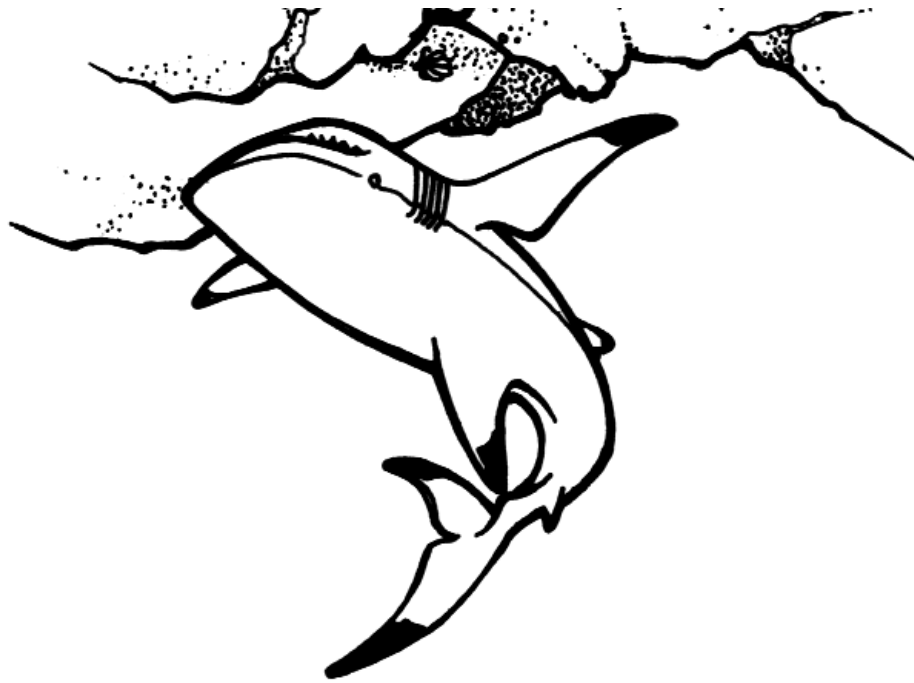




SeaWorld/Busch Gardens Young Learners Background Information



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Prehistoric predators.

If you traveled back in time 400 million years, our planet would appear alien and unfamiliar. You'd find no birds, no flying insects, no mammals—not even any dinosaurs. But in the sea, you would find sharks.

The earliest shark fossils date back to the Devonian Period, also known as the "Age of Fishes."

Representatives of modern-day shark families appeared 100 million years ago, when dinosaurs lived. Unlike other animals, sharks have changed very little since.

blacktip reef shark

Carcharhinus melanopterus

Most sharks don't eat people.

Only 32 of nearly 400 species of sharks are known to attack humans. Most of the time, humans become prey by accident. Sharks may confuse swimmers or divers for prey.

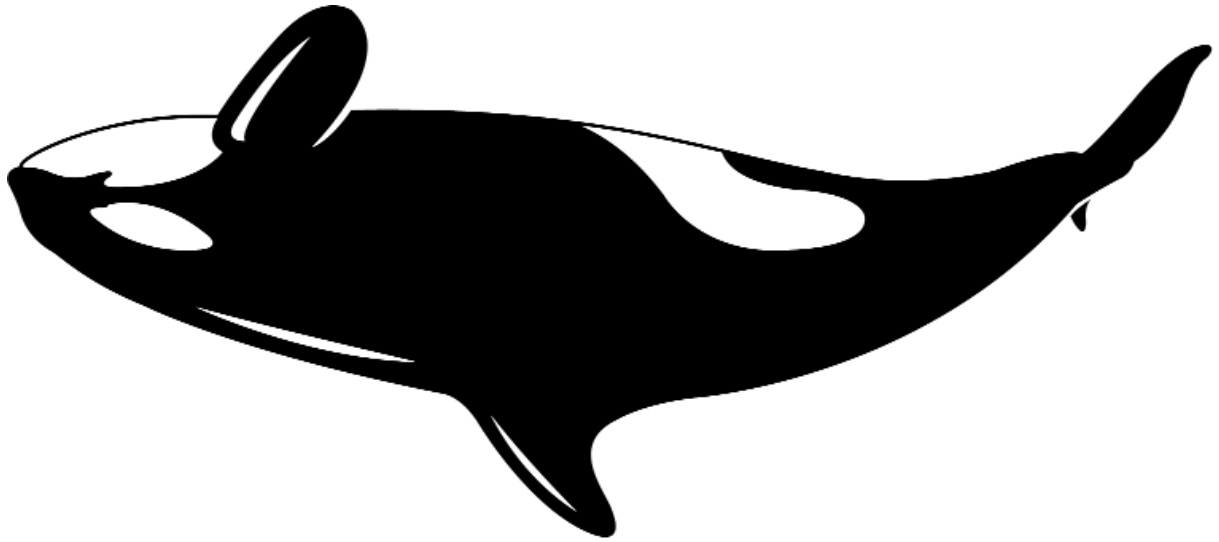
As a group, sharks eat almost anything: fishes, shellfish, marine mammals, and even other sharks. Certain sharks are selective feeders. Hammerhead sharks are known for eating stingrays, and smooth dogfish eat crabs and lobsters.

Sharks in a tide pool?

Sharks range in size from 13.7-meter (45-ft.) whale sharks to 22-centimeter (8-in.) midwater sharks. They inhabit all oceans of the world.

Blacktip reef sharks prefer warm shallow waters close to shore. In the tropical Pacific, you're likely to find these 2-meter (6.6-ft.) sharks among coral reefs at depths of less than 30 cm (1 ft.), even in tide pools!

Blacktip reef sharks eat a variety of small fishes, cuttlefish, squids, octopus, and shrimp. In turn, they are prey for large fish, including other, larger species of sharks.



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killer whale

Orcinus orca

That's no fish!

Killer whales spend their entire lives in water, but like us, they are warm-blooded mammals. A thick layer of blubber beneath the skin insulates a killer whale from even the coldest polar waters.

A killer whale surfaces to breathe air through a blowhole. Under the muscular flap that covers the blowhole, a killer whale's two nasal cavities are similar to nostrils.

Killer whale calves are born under water. They nurse for 12 months or more, filling their tummies with rich milk that can be as much as 48% fat!

A black and white pattern helps hide these predators.

It's easy to recognize a killer whale. A distinct white patch on its belly and two white "eyespot" (actually located just above and slightly behind each eye) contrast with a jet-black body.

A killer whale's striking black and white pattern may help it hunt in the sea. Its color pattern contradicts its body shape, and prey animals may not recognize it as a potential threat until it's too late.

Killer whales are top predators.

Killer whales are social animals. They live and travel in groups called pods.

Swimming together in a pod, killer whales coordinate their hunting so that the whole pod catches food. This gives killer whales the ability to eat just about any animal that swims in the sea—even other, larger species of whales.

What do they eat? Fishes, squids, seals, sea lions, walruses, penguins, and more. Scientists have found that some pods prey mostly on fishes, and others prey mostly on marine mammals.

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California sea lion

Zalophus californianus

Flippers are for swimming and walking.

A California sea lion's flippers have a bone structure similar to that in our hands and arms. If you could see inside a sea lion's flipper, you'd see five long digits or "fingers" and short "arm" bones.

A sea lion swims by moving its long, winglike foreflippers up and down. Its paddlelike hind flippers steer.

Sea lions are also at home on land. Unfazed by rough or rocky terrain, a sea lion rotates its hind flippers under its body and walks on all four flippers, even clambering onto sea cliffs.

Sea lions are both predator and prey.

Sea lions are active predators. Under water, acute vision and hearing help them track down prey animals such as fishes, squids, and octopuses. (Unless it is inhaling or exhaling, a sea lion's nostrils stay closed, and smell is not an important sense for locating food.) A large male sea lion may eat as much as 18 kg (40 lb.) of food in a day.

Adults are safe on land, but at sea, killer whales and sharks prey on California sea lions.

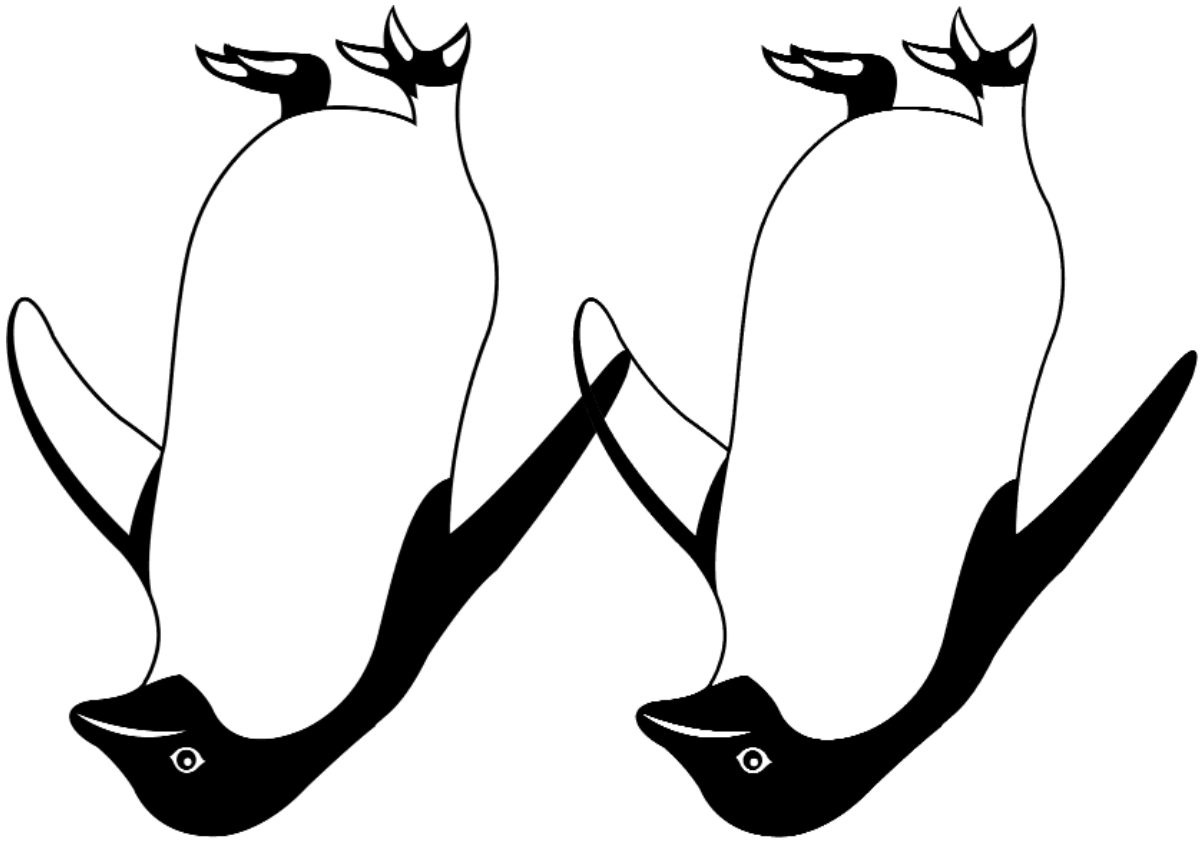
Blubber is a beautiful thing.

Maintaining a constant body temperature is one of the biggest challenges marine mammals face. Mammals lose body heat in water about 27 times faster than in air of the same temperature.

A sea lion stores most of its body fat in a thick layer of blubber just under the skin. The blubber layer insulates the sea lion from cold water. And like any fat deposit, it is also an excess energy reserve.

When diving in very cold water, warm blood is shunted away from the skin and flippers to prevent heat loss.

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Adélie penguins *Pygoscelis adeliae*

These birds don't fly.

Like other birds, penguins have feathers. A thick, waterproof layer of feathers keeps them dry and insulated.

Unlike most other birds, penguins can't fly. They catch all their food in the sea, and their solid, dense bones make them heavy so that they can dive under water. They swim with flipperlike wings. Heavy bones are good for ocean predators, but these birds can't get off the ground!

On land, penguins "waddle" on webbed feet, their upright body supported by short, strong legs.

Penguins live only in the Southern Hemisphere.

All 17 species of penguins live south of the equator. Many species in SeaWorld's Penguin Encounter—including the Adélie—are native to the chilly seas surrounding Antarctica. They are adapted to live in freezing temperatures.

Other species live in warmer areas of the Southern Hemisphere, in waters off Africa and South America. One species, the Galápagos penguin, lives on the equator.

Chicks hatch from eggs.

Adélie penguins nest on Antarctica and nearby islands. They may travel as far as 60 km (37 mi.) from sea to find an ice-free area for their nest.

Adélie parents build a nest of small stones. They take turns incubating their eggs.

Fluffy down feathers cover a chick. Chicks stay close to their parents for food and protection. Both parents help keep the chick warm and feed it regurgitated food. When a chick's waterproof feathers grow in, it can dive and swim to find its own food: fishes, squids, and krill.

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