

Living Under Water

Whales come in all shapes and sizes, from sleek dolphins to giant fish-gulpers. Although they are very different, all whales are perfectly suited to spending their entire lives in water.

Breathing

Unlike you, whales cannot breathe through their mouths. Instead, they breathe through blowholes in the top of their heads. They must come to the surface of the water to take each breath. There, they blow out a big cloud of steamy air, which is often called the "blow." Then they take a big breath in to fill their lungs with fresh air before diving back under water.

Diving

Whales are champion divers. Some can plunge to depths of more than 6,600 ft (2,010 m)—400 times deeper than the deep end of a swimming pool—and stay under water for more than an hour between breaths. A whale's body is designed for deep water: their flexible ribs fold instead of breaking under the water's crushing weight. Blubber keeps them warm in the freezing depths, while blood carries extra energy-giving oxygen to their muscles so they can stay active while holding their breath.

Hearing

As whales spend most of their lives in the darkness of the deep sea, hearing is very important. They use sound to hunt down their dinner, to find their way around, to avoid danger, and to communicate with one another. If you put your head under water in the bath, noises will sound strange and muffled to you. Whales can hear clearly under water because their ears are designed differently. For one thing, sound doesn't enter through an earhole. Instead, it is picked up by fatty parts of the jaw and travels through the whale's head to its inner ear.

Sleeping

Whales have to stay alert to make sure they are at the water's surface when it's time to take a breath. But, like you, they also need sleep. They have solved this problem by putting one half of their brains to sleep at a time. Some whales may snooze at the surface, while others hang vertically in the water. Some can even continue swimming slowly while they sleep.

Seeing

Dip below the waves and you'll see that the ocean is lit up by the sun's rays. Here, a whale can see for a short distance both above and below water. Dive deeper and the light gets dimmer. The large, black pupil in a whale's eye grows bigger to let in as much light as possible. Sink 660 ft (200 m) below the surface—40 times deeper than the deep end of a swimming pool—and it becomes too dark even for whales to be able to see. Luckily, they have other ways to explore their watery world.