



Sperm Whale By C4A Academy



<https://a-z-animals.com/media/2021/07/Sperm-whale.jpg>

The SPERM WHALE is one of the largest mammals in the ocean, growing on average to 60 feet (18 meters) in length and weighing over 50 tons (45 metric tons). They are known for their unique shape and ENORMOUS (huge, vast) size, as well as their INTELLIGENCE and social behavior. Sperm whales are found in oceans all over the world, from the Arctic to the ANTARCTIC. They prefer deep waters and are most commonly found in the open ocean, although they also inhabit CONTINENTAL shelves and shallow seas. The whales can live up to 70 years.

Spell: ENORMOUS ANTARCTIC INTELLIGENCE
What is one of the largest mammals in the ocean? SPERM WHALES
They are known for their unique _____. SHAPE
They inhabit ___ shelves. CONTINENTAL
The average length of a sperm whale is ___. 60 FEET (18 METERS)
The whales can live up to how long? 70 YEARS
What is another word for enormous? HUGE, VAST

Besides their unique shape and enormous size, what else are they known for? INTELLIGENCE, SOCIAL BEHAVIOR

They prefer _____ and are most commonly found in _____.
DEEP WATERS, OPEN OCEAN

If you were a sperm whale, what would you love about the ocean?

Sperm whales have the largest brain of any animal on earth, weighing up to 17 pounds (22 kg). They have a large, BULBOUS head that makes up one-third of their total body length. It is filled with a COMPLEX network of blood VESSELS, allowing them to regulate their body temperature and withstand the pressure of the deep sea. They have a small DORSAL fin, a long and narrow tail, and a thick layer of blubber to help keep them warm in the colder waters of the deep ocean. Their skin is gray in color and often covered in scars and marks from other whales and SQUID. They breathe through the blowhole that is located at the left of their forehead.

Spell: BULBOUS COMPLEX DORSAL
Sperm whales have the largest _____ of any animal on earth. BRAIN
Their head makes up one-third of their total body _____. LENGTH
Their skin is often covered in scars and marks from other whales and _____.
SQUID

Their brain can weigh up to _____. 17 POUNDS (22 KG)

A sperm whale's tail is _____. LONG, NARROW

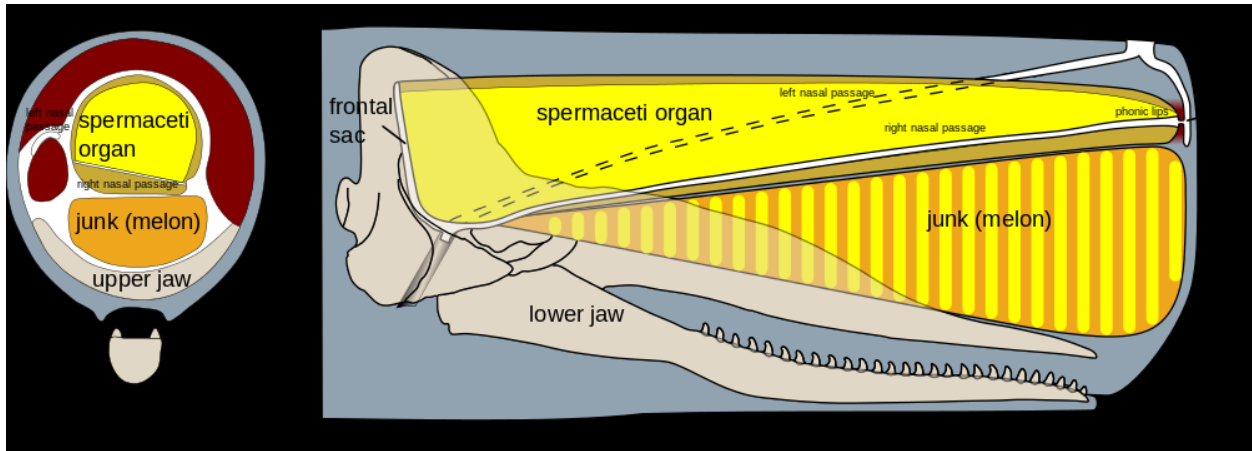
What does the complex network of blood vessels allow the sperm whale to do? REGULATE THEIR BODY TEMPERATURE, WITHSTAND THE PRESSURE OF THE DEEP SEA, etc.

What does the thick layer of blubber do for the sperm whale? KEEP THEM WARM IN THE COLDER WATERS OF THE DEEP OCEAN, etc.

Why do you think they are often covered in scars and marks?

Sperm whales are known for their INCREDIBLE diving ability. They are capable of diving to great depths, up to 3,000 feet (914 meters), in search of food. During these dives, they can hold their breath for over an hour, allowing them to EXPLORE the depths of the ocean. Sperm whales have a large, oil-filled organ in their head, called the SPERMACETI. The spermaceti is a complex organ. It is composed of a large cavity filled with a waxy, white substance called spermaceti oil. This oil is thought to play a number of roles in the whale's biology including aiding in

THERMOREGULATION. Sperm whales are named after the spermaceti organ.



<https://www.awesomestories.com/images/user/e54d4cc352.png>

Spell: INCREDIBLE THERMOREGULATION EXPLORE

The large oil-filled organ in their head is called the _____. SPERMACETI

Sperm whales are known for their incredible _____ ability. DIVING

Sperm whales can hold their breath for over an _____. HOUR

The spermaceti oil was described as a ____ substance. WHITE, WAXY

They are capable of diving up to how many feet? 3,000

Name another ocean mammal that can hold its breath for a long period of time. SEAL, SEA OTTER, ORCA, WALRUS

If you could hold your breath for over an hour, what would you do in the depths of the ocean?

When the whale dives, it is believed that the spermaceti oil helps the whale to control its BUOYANCY (ability to float) by adjusting its DENSITY. As the whale dives deeper, it COMPRESSES the air within the spermaceti, causing the oil to harden and become denser. This allows the whale to sink more easily through the water. When the whale surfaces, it can release the compressed air and the oil will return to its liquid form, helping the whale to float.

Spell: LIQUID COMPRESSES BUOYANCY

When the spermaceti oil hardens it becomes _____. DENSER

When the oil is in a liquid form it helps the whale _____. FLOAT

What is buoyancy? ABILITY TO FLOAT, etc.

As the whale dives deeper it compresses what? THE AIR WITHIN THE SPERMACETI, etc.

Name something else that can float (or has buoyancy). BOAT, TOY DUCK, PEOPLE, PLASTIC BOTTLE, OIL, RAFT, POOL TOY, etc.

In addition to its role in buoyancy control, spermaceti oil is also thought to aid in ECHOLOCATION (location of objects by reflected sound). When the whale produces clicks, the sound travels through the spermaceti oil and is AMPLIFIED, allowing the whale to better detect its surroundings. The oil may also help to protect the whale's DELICATE (fine, intricate) echolocation system from the extreme pressure changes of deep diving. The spermaceti organ plays a key role in the biology of the sperm whale because it allows the whale to NAVIGATE the deep ocean, find food, and COMMUNICATE with others in its pod.

Spell: COMMUNICATE DELICATE NAVIGATE

The sound of the click travels through the spermaceti oil and is ____.
AMPLIFIED

The location of objects by reflected sound is called ____.
ECHOLOCATION

The spermaceti organ helps the whale communicate with others in its ____.
POD

The spermaceti organ allows the whale to do what? NAVIGATE THE DEEP OCEAN, FIND FOOD, COMMUNICATE WITH ITS POD

What is another word for delicate? FINE, INTRICATE

The oil may also help to protect the whale's delicate echolocation system from what? EXTREME PRESSURE CHANGES OF DEEP DIVING, etc.

What human body part is affected by pressure changes? EAR



(Source: <https://en.wikipedia.org/wiki/Ambergris>)

Another interesting substance sperm whales produce is AMBERGRIS. Which is a waxy substance that is produced in their INTESTINES. It is expelled from the whale and can float on the ocean surface for years before washing up on shore. Historically, ambergris was highly valued for its use in PERFUMES, as it has a unique, earthy scent that can enhance and prolong the fragrance of other fragrances. Today, it is still used in high-end perfumes and is considered a rare and valuable substance. However, with the increasing popularity of SYNTHETIC (fabricated) fragrance INGREDIENTS, the demand for ambergris has declined.

Spell: AMBERGRIS INGREDIENTS SYNTHETIC

Ambergris is produced in the whale's _____. INTESTINES

Ambergris has a unique earthy _____. SCENT

What is another word from fabricated? SYNTHETIC

Ambergris can float on the surface of what for years? OCEAN

Ambergris was highly valued for its use in _____. PERFUMES, FRAGRANCES

Ambergris is considered what? RARE, VALUABLE SUBSTANCE

What would you do if you saw some ambergris washed up on shore?

Sperm whales are APEX (top, peak) PREDATORS and feed mainly on giant SQUID and OCTOPUSES, which they hunt in the deep sea. Their large teeth, up to eight inches (20 cm) long, are used to capture and hold their prey, while their powerful jaws can crush the shells of their prey with ease. In addition to hunting deep-sea creatures, they have also been known to feed on fish and SHRIMP.

Spell: SQUID APEX OCTOPUSES

Sperm whales are apex _____. PREDATORS

The whale's teeth are up to how long? 8 INCHES, (20 CM)

Sperm whales use their jaws to crush the shells of their _____. PREY

In addition to squid and octopuses, sperm whales also eat _____. FISH, SHRIMP

What is another word mentioned for apex? TOP, PEAK

Think of another animal with powerful jaws. SHARK, ALLIGATOR ETC.

Would you rather be in the ocean with a sperm whale or a shark? Why?

Sperm whales are one of the most intelligent animals on the planet. They are capable of complex problem-solving, learning, and communication. Sperm whales communicate with each other using a variety of VOCALIZATIONS, including clicks, WHISTLES, and songs. These songs are unique to each pod and can be used for communication and navigation, as well as for attracting mates. The COMPLEXITY of their songs has led scientists to believe that they may have a SOPHISTICATED system of language. Sperm whales are the loudest animals on the planet, capable of making sounds that can reach over 230 DECIBELS.

Spell: SOPHISTICATED COMPLEXITY VOCALIZATIONS

Sperm whales are one of the most intelligent animals on the _____. PLANET

They are capable of making sounds over 230 _____. DECIBELS

Sperm whales communicate with each other using a variety of ____.

VOCALIZATIONS, CLICKS, WHISTLES, SONGS

Besides communication what else are sperm whales capable of?

COMPLEX PROBLEM SOLVING, LEARNING

These songs are unique to each pod and can be used for what?

COMMUNICATION, NAVIGATION

Name another animal who is capable of learning. DOG, RAT, DOLPHINS ETC.

What kind of things would you like to teach a sperm whale?

VAKTivity: The Sound of Sperm Whales (2.26 m.)

<https://www.youtube.com/watch?v=HS9OIBifQVw>

Spyhopping

Lobtailing



https://whalewatchingazores.com/blog/wp-content/uploads/2018/10/DSC_0940.jpg



https://whalewatchingazores.com/blog/wp-content/uploads/2018/10/DSC_0004.jpg

Sperm whales are highly social animals and live in groups, or PODS, of up to 20 INDIVIDUALS. The pods are made up of females and their young, while adult males live alone or in small groups. Sperm whales are known for their COOPERATIVE behavior, with pods working together to find food and protect their young. They are also known for their playful behavior, including BREACHING, or leaping out of the water, SPYHOPPING or vertically projecting their head out of the water, and LOBTAILING, which is slapping the water with their tail.

Spell: INDIVIDUALS BREACHING SPYHOPPING
Sperm whales are known for what kind of behavior? COOPERATIVE

The name for a group of whales is what? POD

Slapping the water with your tail is known as _____. LOBTAILING

Up to how many sperm whales can be in a POD? 20

The pod works together to do what? FIND FOOD, PROTECT YOUNG

What is breaching? LEAPING OUT OF THE WATER, etc.

What is spyhopping? VERTICALLY PROJECTING THEIR HEAD OUT OF THE WATER

What other ocean animals breach? SHARKS, DOLPHINS

Female sperm whales reach maturity around 9 years when they are about 29 feet long and their growth starts to slow. Sperm whales REPRODUCE in the warmer waters of the EQUATORIAL (of, at or near the equator) region. Females give birth to a single calf every five to seven years. The calves are cared for by the females in the pod and nurse for up to 2 years before becoming INDEPENDENT (not subject to control by others).

Spell: INDEPENDENT REPRODUCE EQUATORIAL
Sperm whales reproduce in the _____ waters of the equatorial region.
WARM

Who in the POD cares for the calves? FEMALES

Females give birth to a calf every five to _____. 7 YEARS

Sperm whales reach maturity around ____ years of age. 9

What does equatorial mean? OF, AT OR NEAR THE EQUATOR

What is the definition given for independent? NOT SUBJECT TO
CONTROL BY OTHERS

Sperm whales were heavily hunted in the 19th and 20th centuries for their oil and spermaceti, which were used in a variety of products, including candles, soap, and LUBRICANTS. Despite protections put in place in the 1980s, the population of Sperm whales has not fully recovered, and they are currently listed as a VULNERABLE (at risk, in danger) species. Threats to their survival include commercial whaling, ENTANGLEMENT in fishing gear, and pollution. Efforts to conserve and protect sperm whales are ongoing and scientists are working to better understand their population numbers, MIGRATION patterns, and social behaviors to inform future conservation efforts.

Spell: VULNERABLE ENTANGLEMENT LUBRICANTS

Scientists are trying to understand what kinds of patterns? MIGRATION

Threats to sperm whales include whaling, entanglement, and _____.

POLLUTION

What year were protections put into place? 1980's

Sperm whales were heavily hunted during which centuries? 19TH AND
20TH

Efforts to _____ and _____ sperm whales are ongoing. CONSERVE,
PROTECT

One of the products mentioned that was made from sperm whales was
____. CANDLES, SOAP, LUBRICANTS

What is another word or phrase for vulnerable? AT RISK, IN DANGER

Scientists are working to better understand migration patterns and what
else? POPULATION NUMBERS, SOCIAL BEHAVIORS

Think of a way in which we can better protect the sperm whale.

The sperm whale is a MONUMENTAL (enormous, gigantic) and powerful animal that has captured the imagination of people for centuries. From its massive size and hunting PROWESS (skill, expertise) to its social behavior and intelligence, the sperm whale is truly a remarkable species. Unfortunately, they continue to face threats from human activities. Conservation efforts are underway to protect this species and ensure that future generations will be able to experience the wonder and majesty of the sperm whale. Whether as a symbol of power and grace or as a subject of study and conservation, the sperm whale will continue to CAPTIVATE us for many years to come.

Spell: MONUMENTAL PROWESS CAPTIVATE

The sperm whale has captured the imagination of people for ____.

CENTURIES

The whale is the subject of conservation and ____.

STUDY
Whales face threats from humans ____.

ACTIVITIES
What is another word given for monumental? ENORMOUS, GIGANTIC

What is another word mentioned for prowess? SKILL, EXPERTISE

The sperm whale is a symbol of ____.

POWER, GRACE
What do you find most interesting about sperm whales?

This lesson was adapted from text generated by ChatGPT.

References:

<https://a-z-animals.com/blog/9-most-interesting-animals-in-the-world/>

<https://www.fisheries.noaa.gov/species/sperm-whale>