



## SHARKS AND SUSTAINABILITY Activities Booklet

### APPENDIX 1 Frequently asked questions about sharks

*Source: Jewels of The Sea: A marine education resource guide, Marine Life Society of South Australia Inc. Dec 2001*

#### **Q1. What is a shark?**

A. A shark is a fish. It breathes through its gills, has a backbone and lives in sea water. However, unlike all other fish, its skeleton is made from cartilage, not bone and they do not have scales but denticles (tiny teeth-like projections). Also, they have five to seven gill slits rather than one each side as in bony fish. Shark tails are always uneven – the upper lobe is always larger than the bottom lobe. Their fins are rigid unlike the soft fins of fish which are supported by rays or spines. Buoyancy is provided by an oily liver compared with many fish that have a gas filled swim bladder. The mouths of fish are generally on the front of their heads whereas sharks and rays have their teeth under their head. Fertilisation of eggs in sharks takes place inside the mother's body compared with most fish where fertilisation occurs outside of the parents' bodies.

#### **Q2. Which is the fastest shark?**

A. The Mako is the fastest shark in the ocean, able to swim at up to 35 kph. Also known as the Blue Pointer, it feeds on salmon and it is regarded as "a fine sporting fish which fights gamely".

#### **Q3. How long do sharks live?**

A. Life span varies from species to species. The Whale shark is thought to live over 100 years but the average life span of a shark is 25 years.

#### **Q4. Which is the biggest shark?**

A. The Whale Shark can grow up to 14 metres long, although the average length is 7.6 metres. Its mouth can be up to 1.2 metres wide. These sharks swim with their mouths open to catch plankton and shrimp in the water, which they filter from the water through their gills. The largest shark in SA is the Basking Shark which grows to 11 metres. The SA Museum has an excellent cast from a male Basking Shark. Like the Whale Shark, it feeds on plankton.

#### **Q5. Which shark is the smallest?**

A. The Spined Pygmy shark, found in the deep oceans, is the smallest known shark at only 25 centimetres long.

#### **Q6. How many species of sharks are there?**

A. Worldwide, there are over 350 species of sharks and 400 species of rays. Despite this diversity, you know when you're looking at a shark or a ray because of their distinct body forms. Some adaptations enable sharks and rays to specialise in new ways of getting around, hunting, and feeding. These kinds of changes can increase the odds of survival, reproduction, and passing on those traits to the next generation, as well as enable species to use resources within a habitat differently, reducing competition.

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**Q7. How many teeth do Great White's have?**

A. They can have up to 300 teeth at a time, arranged in 5 rows which act as a "conveyor belt" to replace the front teeth as they are lost. Sharks constantly lose and replace teeth in this way throughout their life.

**Q8. Why do we need sharks?**

A. Sharks are not just magnificent creatures but also play a vital role in our oceans. If they were to disappear, the whole balance of the sea would be upset. Like other large predators, sharks play an important role both as scavengers, eating the carcasses of dead animals. Large sharks also help the ecosystem by keeping the population numbers of their prey in check, as well as maintaining the "genetic fitness" of populations of other species by selecting out sick or weak individual animals.

**Q9. Which are the most dangerous sharks?**

A. The most dangerous sharks to man are the Great White, Tiger and Bull sharks. Other species are considered dangerous but most sharks only attack if provoked.

**Q10. How long have sharks been around?**

A. Sharks have been around for 350-400 million years and are one of the most successful vertebrates on the planet.

**Q11. Are sharks warm or cold blooded?**

A. Like other fish, most sharks are "cold-blooded". However certain species, such as the Great White and Porbeagle sharks, can raise their body temperature above that of the surrounding water.

**Q12. Do sharks eat a lot?**

A. A shark eats about 2 percent of its body weight per day which is less than a human eats. They are "cold-blooded" and don't eat as much as humans, storing energy in their large livers until it is needed. They can go for long periods of time between feeding and can keep prey in their stomachs until they wish to digest it.

**Q13. Do sharks have a good sense of smell?**

A. Yes, sharks can detect one part of blood per ten billion parts of water – that means they could detect one drop of blood in an Olympic swimming pool.

**Q14. Why do people kill sharks?**

A. Shark meat is used for human consumption, the skin for leather and the liver for oil. Large numbers of sharks are caught in southern Australia where their meat is sold as flake in fish and chip shops. Shark fin soup is popular in Asia and sharks are caught for sport trophies.

**Q15. Are there any freshwater sharks?**

A. The Bull shark can survive in freshwater and has been seen thousands of kilometres up rivers in Africa and South America.

**Q16. How do sharks reproduce?**

A. In many different ways. Some sharks, such as the Port Jackson Shark, lay eggs and the young shark hatches out. Great Whites give birth to live young which are fully developed miniatures of the adult. In other species, such as the Mako Shark, the baby sharks hatch from the egg inside the mother before being born.

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- B. The mothers do not care for the young after birth. In some species like the Grey Nurse the fittest pup eats its brothers and sisters before they are born to increase its own chance of survival from the moment of birth [intra-uterine cannibalism]. It is thought that Great White pups do not actually eat other young, but might eat the undeveloped eggs before birth.

**Q 17. Which shark has the longest tail?**

A. The Thresher Shark has the longest tail, with the upper lobe being the same length as the body of the shark.

**Q18. Which shark has the strongest bite?**

A. The Dusky shark can exert over 60 kilograms of pressure when it closes its jaws.

**Q 19. Do sharks have good eyesight?**

A. Most sharks have good eyesight and can even see in colour. They can detect a light that is ten times dimmer than the dimmest light a human can see.

**Q20. Are sharks intelligent?**

A. Sharks are much more intelligent than people originally thought. They have a large, complex brain which is relative in size to that of birds. They are also able to be trained to perform tasks, such as pushing a bell in order to get food.

**Q21. Do sharks have to swim all the time?**

A. Some sharks have to swim all the time in order to breathe, but some can lie motionless on the bottom and breathe by pumping water over their gills. Port Jackson sharks, Wobblygong, Catsharks, Sawtail shark and Draughtboard sharks can all do this.

**Q22. What is a shark's favourite food?**

A. Sharks eat all sorts of food depending on the species. Great Whites eat seals, dolphins and tuna whilst whale sharks and basking sharks eat small shrimp and plankton. The Tiger shark normally eats turtles and fish, but has been found with tyres, coal, shoes, license plates and even a suit of armour in its stomach. Many sharks will scavenge.

**Q23. Are there any predators of sharks?**

A. Generally, the only predators of sharks are bigger sharks or humans – we kill over 30 million sharks every year. An Orca [Killer] Whale was filmed attacking and killing a Great White. There are more kinds of parasites than any other kind of living thing and sharks have a number of internal and external parasites.

**Q24. Do sharks have more senses than us?**

A. Yes, as well as the five senses humans have, they also have a "sixth sense". They can sense electrical and magnetic fields, which help detect struggling fish and navigate using the earth's magnetic fields. They do this using jelly-filled canals located in their snouts. This sense is so powerful they could detect a battery in the middle of the ocean.

**Q25. Do sharks make sounds?**

A. Sharks do not have any special organs for making sounds. They cannot make noise apart from the gnashing of their teeth.

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### Q26. Can sharks feel pain?

A. In some cases, sharks seem to feel pain, such as when tags are injected into them. They have a violent lifestyle where territorial disputes and even mating involves biting. Sharks are quite used to injury. They seem to heal extremely quickly. However, sometimes sharks have been seen to continue feeding even when they are badly injured e.g. eating their own intestines and stomach during a feeding frenzy.

### Q27. Why are some sharks endangered?

A. Overfishing is the major cause of sharks becoming endangered. The Great White is now a threatened species due to the sports fishing that has taken place over the past decades. In Australian waters the Great White and the Grey Nurse sharks have some forms of protection because their numbers are very low compared to their original populations. Both species have small numbers of babies and do not start breeding until they are relatively old. White sharks are protected in most Australian states.

### Q28. How big are baby sharks?

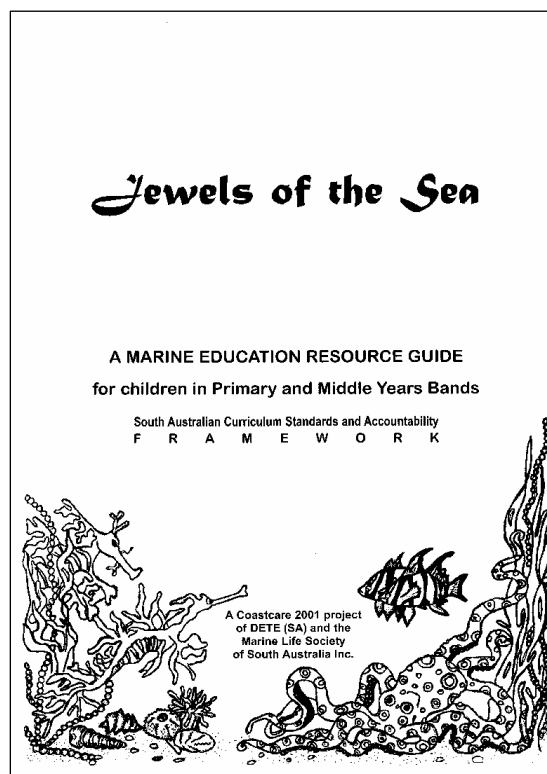
A. This varies from species to species. Spurdog pups are only about 30cm long, Makos about 60cm. When Great Whites are born they are about 120 cm long whereas Basking shark pups can be as big as 180 cm.

### Q29. How dangerous are sharks to humans?

A. Sharks kill about 100 people in the world each year. However, elephants kill 200 people per year and in Africa, hippos are the number one cause of deaths and accidents. You are more likely to be hit by lightning or killed by bees.

### Q30. How many fatal attacks in S.A.?

A. There have been 29 shark attacks in South Australia, 15 of which were fatal. Of these, 13 were due to Great White sharks and 10 of those people died from their injuries.



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