



SHARKS

By Kyle Rose

SHARKWATER

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Hello Everyone

Join me as we journey through life in the ocean as one of the most recognised creatures on the planet, The Shark.

We will look into the depths of the ocean to see how this truly amazing creature lives its life and how important it is for sharks to remain living in our oceans.

We will also look at the dangers that sharks face, as the oceans top predator is threatened by one thing, Mankind.

Before we look at the dangers that sharks face.....

What is a shark?

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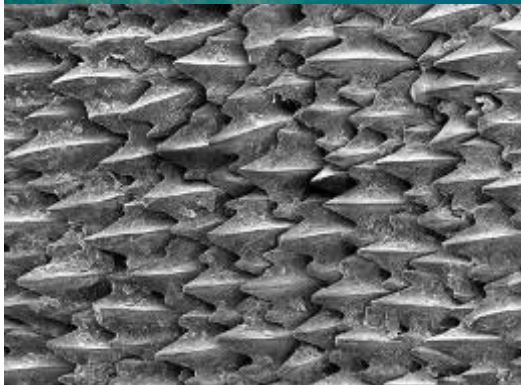
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What Is A Shark?

Sharks are a type of fish with a full 'cartilaginous' skeleton, meaning all joints are joined by cartilage and hence they have more movement. Sharks also have a highly streamlined body.

Sharks have been around for 440 million years. There are 440 species, ranging in size from the small dwarf lantern shark, a deep sea species of only 17 centimetres (6.7 in) in length, to the whale shark, the largest fish, which reaches approximately 12 metres (39 ft 4 in) and feeds only on plankton, squid, and small fish by filter feeding.

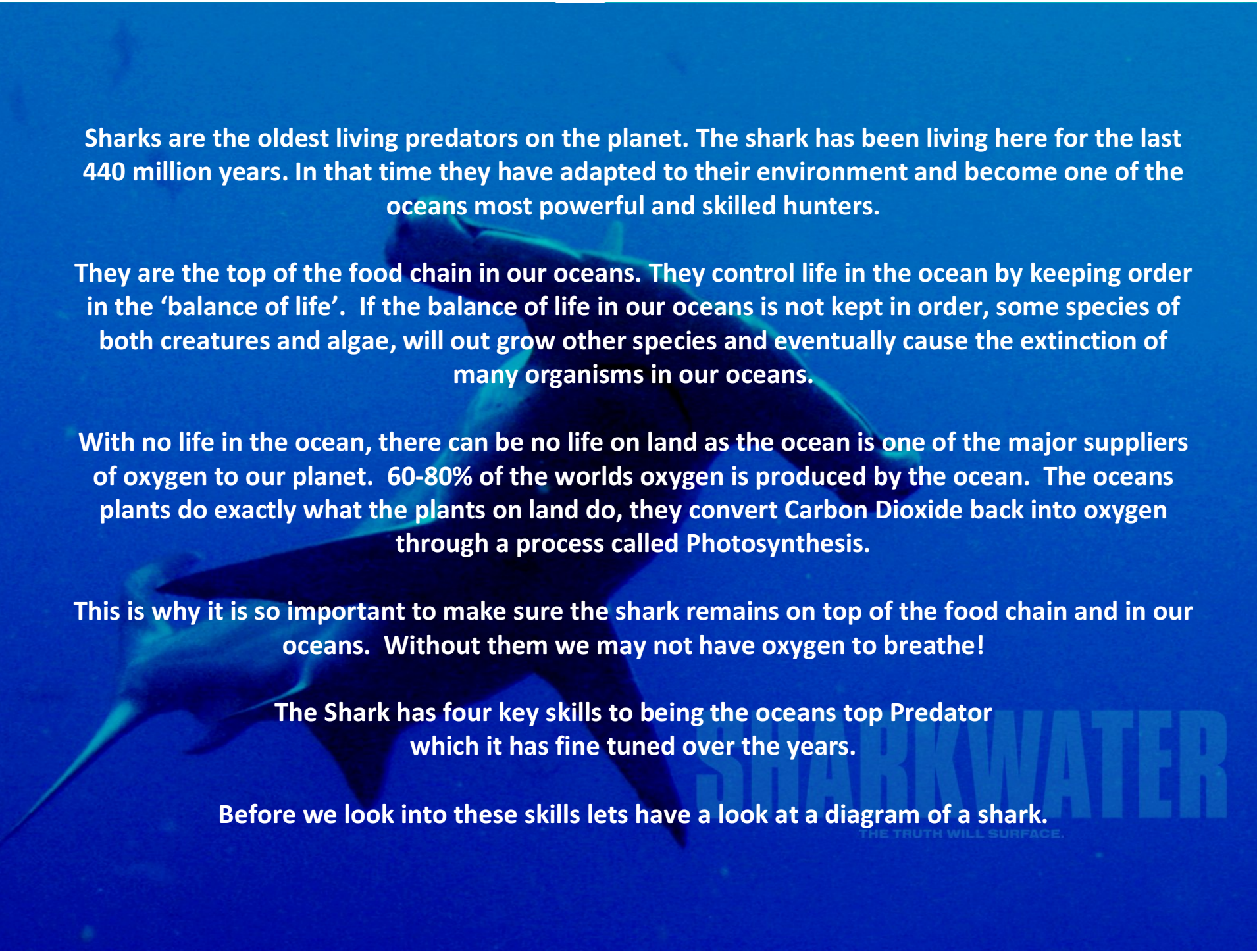
Close up of Shark skin



Sharks are found in all oceans and are common down to depths of 2,000 metres. They generally don't live in freshwater, with a few exceptions such as the bull shark and the river shark which can live both in seawater and freshwater. Sharks breathe through five to seven gill slits located on the sides of their head.

Sharks have a covering of 'dermal denticles' (tough scales) that protect their skin from damage and parasites, and improves their fluid dynamics so they can move faster through the water. They also have several sets of replaceable teeth.

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Sharks are the oldest living predators on the planet. The shark has been living here for the last 440 million years. In that time they have adapted to their environment and become one of the oceans most powerful and skilled hunters.

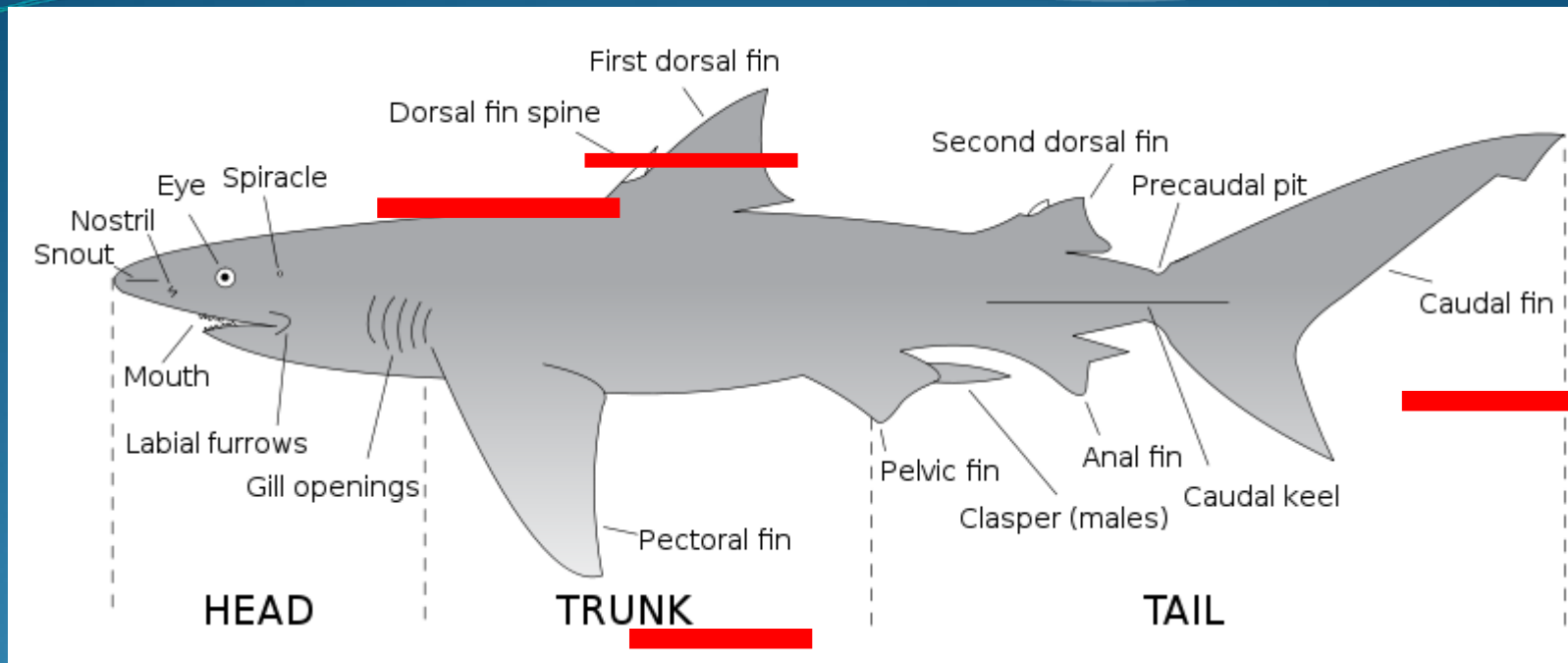
They are the top of the food chain in our oceans. They control life in the ocean by keeping order in the 'balance of life'. If the balance of life in our oceans is not kept in order, some species of both creatures and algae, will out grow other species and eventually cause the extinction of many organisms in our oceans.

With no life in the ocean, there can be no life on land as the ocean is one of the major suppliers of oxygen to our planet. 60-80% of the worlds oxygen is produced by the ocean. The oceans plants do exactly what the plants on land do, they convert Carbon Dioxide back into oxygen through a process called Photosynthesis.

This is why it is so important to make sure the shark remains on top of the food chain and in our oceans. Without them we may not have oxygen to breathe!

The Shark has four key skills to being the oceans top Predator which it has fine tuned over the years.

Before we look into these skills lets have a look at a diagram of a shark.



Above is a diagram of what most sharks look like, even though they do come in all shapes and sizes they all basically have what is listed above.

Note the parts underlined in red. These are the valuable parts to a shark that is threatening their existence. We will look at this shortly.

Now lets look at four key hunting skills that makes the shark a top predator.

SMELL

Sharks have very good senses, with some species able to detect as little as one part per million of blood in seawater. They are more attracted to the chemicals found in the guts of many species, and as a result often linger near or in sewage outfalls. Some species, such as nurse sharks, have external barbels that greatly increase their ability to sense prey

Barbels



SIGHT

Shark eyes are similar to the eyes of other vertebrates. Their eyesight is well adapted to the marine environment with the help of a tissue called tapetum lucidum. This means that sharks can contract and dilate their pupils, like humans. This tissue is behind the retina and reflects light back to it, thereby increasing visibility in the dark waters.

Sharks have eyelids, but they do not blink because the surrounding water cleans their eyes. To protect their eyes some species have nictitating membranes. This membrane covers the eyes while hunting and when the shark is being attacked. However, some species, including the great white shark (*Carcharodon carcharias*), do not have this membrane, but instead roll their eyes backwards to protect them when striking prey.

There are also studies that support the fact that sharks may be colour blind.



HEARING

Although it is hard to test shark's hearing, they may have a sharp sense of hearing and can possibly hear prey many miles away. A small opening on each side of their heads leads directly into the inner ear through a thin channel. These two vibration and sound detecting organs are grouped together to form the hearing system.

The background of the slide is a movie poster for 'Sharkwater'. It features a deep blue underwater scene with sunlight filtering down from the surface, creating a bright, hazy area at the top. Two divers are visible in the middle ground, and a shark is swimming in the foreground. The title 'SHARKWATER' is written in large, bold, blue capital letters across the bottom, with the tagline 'THE TRUTH WILL SURFACE.' in smaller white capital letters below it.

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ELECTRO-RECEPTION

The shark has the greatest electrical sensitivity of any animal. Sharks find prey hidden in sand by detecting the electric fields they produce. Ocean currents moving in the magnetic field of the Earth also generate electric fields that sharks can use for orientation and possibly navigation.

The four skills we have just looked at make a shark an expert at finding its prey. Their bodies are built slimline and strong to move quickly through the water. They have an excellent sense of sight, smell, hearing, electro-reception and a strong jaw full of razor sharp teeth.

But does this make sharks dangerous to us?

Are Sharks Dangerous to Humans?

Sharks have been the top predator in the ocean until one creature came along and took the title, that creature was us.

As we have evolved over the years our advances in technology have made us the top predator in the world, both on land and in the ocean.

We can take or do anything we like in this world with no challenge from any other species.

Even though we are now number one, doesn't mean that there is no danger to ourselves. Sharks have a bad reputation when it comes to attacks on humans, but really they are more accidents than attacks.

When you enter the ocean you're entering the sharks backyard, imagine the shark is an unfamiliar dog and you've walked into its backyard. More than likely the dog doesn't know who you are and might attack you, this is the same as sharks, they don't know what we are as we are not a part of their normal diet.

Many victims of shark attacks are only bitten once then the shark lets go. Many people believe this is how the shark figures out what we are. They don't have arms or hands to touch and feel us. So unfortunately they give us a little bite instead.

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Survivors of shark attacks have started campaigning to save the shark as they are more of a misunderstood animal than a man eater. One of these people is Rodney Fox, who is the survivor of one of the worlds worst shark attacks & founder of the Rodney Fox White Shark Foundation.

Do you know what a vending machine is?

Are you scared of vending Machines?

If I said that you are 10 times more likely to die from a vending machine than a shark attack, would you change your mind?

10 people die from vending machine accidents to every shark attack.

Apparently people shake the vending machines and they fall on them!



Most people who are attacked by sharks in Australia are surfers and spear fishermen, who are normally in an environment where the shark is looking for food. From underwater a person snorkelling or someone on a surfboard look exactly like a seal, as these photos below show we look just like a sharks favourite food.



SURFER

SEAL

SPEARFISHERMAN

But even though we look like their favourite food, attacks are rare and most the time non-lethal.

So are sharks that dangerous to humans??

Here are some statistics to help you decide

Shark Attack Statistics

Sharks kill 5 people each year. In one year crocodiles worldwide have killed as many people as sharks have in the last 100 years.

**Crocodiles are protected.
Sharks are not.**

Elephants and tigers: 100 people

Execution: 2,400 people

Illegal Drugs: 22,000 people

Road Accidents: 1,200,000 people

Starvation: 8,000,000 people

Compared to the rest of these everyday accidents that could happen to anyone , sharks are less dangerous then going for a drive to the shops.

So why are we culling the oceans top predator to near extinction.
Shouldn't we be trying to protect something that is so important to the life of our oceans?

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Shark Finning

We're killing 30 – 70
million sharks a year

An underwater scene with a bright sunburst effect at the top center. Two divers are silhouetted against the light. A shark is swimming in the lower right. The word 'SHARKWATER' is written in large, semi-transparent blue letters across the bottom right.

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What Is Shark Finning?

Shark finning refers to the removal and retention of shark fins and the discard at sea of the carcass. The shark is most often still alive when it is tossed back into the water. Unable to swim, the shark slowly sinks toward the bottom where it is eaten alive by other fish.

Shark finning takes place at sea so the fisherman have only the fins to transport. Shark meat is considered low value and therefore not worth the cost of transporting the bulky shark bodies to market.

Any shark is taken-regardless of age, size, or species.

Longlines, used in shark finning operations, are the most significant cause of losses in shark populations worldwide.



Shark finning is widespread, and largely unmanaged and unmonitored.

Shark finning has increased over the past decade due to the increasing demand for shark fins, improved fishing technology, and improved market economics.

The greatest demand for the fins is to produce Shark Fin Soup and traditional cures. Shark Fin soup is eaten in Asian countries and is a sign of wealth. The shark fin adds no flavour, just a texture. They use shark fins in traditional cures as they believe sharks don't get cancer, something that has not been proven.

One kilogram of dried shark fin can retail for \$1,000 or more. It's a multi-billion dollar black market industry.



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Impacts Of Shark Fining

Loss and devastation of shark populations around the world.
Experts estimate that within a decade, most species of sharks will be lost because of longline fishing.

Unsustainable fishery. The massive quantity of sharks harvested and lack of selection deplete shark populations faster than their reproductive abilities can replenish populations.

Threatens the stability of marine ecosystems.

Loss of sharks as a food staple for many developing countries.
Local waters are invaded by large industrial, foreign fishing vessels that threaten traditional sustainable fisheries.

Threatens socio-economically important recreational fisheries.

Obstructs the collection of species-specific data that are essential for monitoring catches and implementing sustainable fisheries management.

Wasteful of protein and other shark-based products. Up to 99 per cent of the shark is thrown away



Are There Laws Against Shark Fining?

Each country with a coastline is responsible for laws and regulations pertaining to fishing in their waters.

A number of countries have shark-fining legislation. Many stipulate that fins must arrive in a 5 per cent weight ratio of the shark carcasses onboard. Only a few countries demand that sharks arrive in port with fins attached.

According to the IUCN Shark Specialist group, the easiest way to implement a ban is to require that shark carcasses be landed with fins attached. The possession of fins alone on vessels would thus be illegal.

Shark fining violates the United Nations Food and Agriculture Organization's Code of Conduct for Responsible Fisheries.

Shark fining is contrary to the United Nations Food and Agriculture Organization's International Plan for the Conservation and Management of Sharks.

The United Nations Convention on the Trade of Endangered Species of Flora and Fauna (CITES) lists the whale shark, basking shark, and great white shark as species that could become threatened if trade is not controlled. To date, 169 countries have agreed to be legally bound by CITES

So if Shark fining is Illegal, why is it still happening?

Shark Fin Soup

Is the only reason the shark fin industry survives.

Shark fin soup is a traditional Oriental dish similar to whale meat.

It is a sign of wealth and power and is usually eaten on special occasions such as weddings.

It has very little taste and is often mixed with chicken stock for flavour.

This is a want, not a need.

Why do they need to have something that is not crucial to their everyday life?

Thousands of sharks are killed each year for no reason.

The shark fin industry, if not controlled or stopped, will eventually be the cause of the extinction of the Shark.

We will be the cause of the oceans greatest and oldest predators demise.

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What can you do to stop Shark Finning?

The best way to stop shark finning is to spread the word.

Take what you've learnt here today and tell someone else, let them know what is going on in our oceans. If enough people know what is going on, then more people can get involved in stopping it.

Another way to help out is:

If you hear of any organisations trying to convince governments to ban shark finning, support them. Without community support governments won't take action to ban shark finning and it will continue to take a toll on our oceans.

I hope you have learnt a valuable lesson today about sharks and shark finning and hopefully it has made you understand the importance of this great creature in our oceans.

**We can be
friends with
sharks**

