Age 6-11 years

Conservation

Self-guided learning

This guide provides you with information linked to key displays throughout SEA LIFE London Aquarium which can be used to explore the topic of conservation during your visit. By drawing out the points included in this guide you will be able to introduce or recap on key learning outcomes and provide pupils with a fantastic real life context for learning.

Workshops

Workshops to consolidate this learning are also available. Further details about workshops can be found on our website or by speaking to our team before your visit.

Other topics in this series:

- Behaviour
- Habitats & Adaptations
- Food Chains & Ecosystems

Contents

Learning objectives

By completing this tour pupils will:

- Become familiar with a range of different marine creatures and environments.
- Learn about a variety of threats affecting different species.
- Understand that human activity can have a big impact on marine creatures.
- Find out what steps they can take to help protect vulnerable marine species and their habitats.
- Find out about the work SEA LIFE is doing to protect the ocean and its creatures for future generations.

Introduction

Use the questions on this page to introduce this topic to pupils before starting your tour.

Questions:

Our oceans are home to lots of really amazing creatures. However big or small, each creature is equally as important. Do you know why?
Every creature plays an important role in its environment and is relied upon by other creatures and plants for lots of different reasons – including food and protection. If any species is removed from its habitat, perhaps because it becomes extinct, this can have a big impact on the other species living there.

Why do you think a species might become extinct?
There are many reasons why a species might become extinct. Some causes are natural, such as changes to the weather, whilst others are the result of human activity like hunting, pollution or destruction of habitats.

Can you think of any other words for protecting ocean creatures?
Another word that can be used is conservation. SEA LIFE London Aquarium is very passionate about conservation and is involved in a lot of projects around the world to help breed, rescue and protect the marine creatures at most risk.

So now we know a little more about conservation let's start our trip around SEA LIFE London Aquarium to find out about the threats facing marine creatures and learn what we can all do to help.

Remember to hand out exploration sheets to each pupil - these will be needed for activities on the tour.

Teacher's map

Activities

Shark Reef Encounter
- Feeding time:

14.30

Rockpool
- **Who's at home in the rockpool?** pupil activity
- **Rockpool** discussion notes (p4)

Nemo's Coral Caves
- **Coral reefs under threat** pupil activity
- **Clownfish** discussion notes (p5)
- Feeding time:

15.30

Ray Lagoon
- **Which Ray?** pupil activity
- **Rays** discussion notes (p6)
- Feeding time:

11.30

Seahorse Temple
- **Partners for life** pupil activity
- **Seahorse** discussion notes (p7)

Rainforests of the World
- Feeding times:

12.30 16.30

Ocean Tunnel
- **Endangered Sea Turtles** pupil activity
- **Sea turtle** discussion notes (p8)
- **Sharks at SEA LIFE** pupil activity
- **Sharks** discussion notes (p9)

For more information on feeding times please check at the admissions desk on arrival.

ROCKPOOL

Visit Area: ROCKPOOL

Rockpools are very difficult places for creatures to survive - with huge waves, strong currents, changing water temperatures, harsh sunlight and lots of predators! Unfortunately human activity is also having a negative effect on rockpool creatures.

Questions:

How many different creatures can you identify in the rockpool?

The rockpool is likely to contain: common starfish, anemone, shore crab, edible crab, sea toad, hermit crabs and grey mullet. One other creature found in the rockpool that we can't see without a microscope is called plankton (which is made up of tiny animals and plants).

How do you think human activity is having an effect on a creature as tiny as plankton?

The Earth is getting warmer because people are adding heat-trapping gases to the atmosphere, mainly by burning fossil fuels. This is called the "greenhouse effect". The oceans are getting warmer too, making it harder for plankton to survive. Over the last 50 years the amount of plankton has almost halved.

Why does it matter if there's less plankton?

It matters because lots of animals rely on eating plankton to survive. For example in rockpools mussels eat plankton, so if the number of plankton goes down then fewer mussels can survive.

What else do humans do that can have a bad effect on rockpools?

People often try to remove creatures from the rockpool which can easily cause them injury. Litter and pollution from humans can end up in rockpools too, often causing terrible damage to the creatures and their habitats.

FACT
Hermit crabs live in colonies of up to 100 or more.

FACT
If the Sea Anemone is not eaten or destroyed it can live for decades.

Activity: Respecting rockpools

Ask pupils to identify the creatures they can see in the rockpool and then colour them in on their exploration sheet. Pupils can then touch creatures under the guidance of a SEA LIFE London Aquarium expert.

PROTECT

You can help!

We should always take our litter home after we've visited the beach and make sure any rockpools we find aren't disturbed. We should also try to reduce the amount of energy we consume at home.

CLOWNFISH

Visit Area: NEMO'S CORAL CAVES

Clownfish live on sheltered coral reefs found in the warm tropical waters of the Indian and Pacific Oceans. Within their habitat they find a very unusual place to hide - amongst the poisonous tentacles of sea anemones!

Questions:

How do you think clownfish can live inside an anemone without being killed by its tentacles?

Clownfish are immune to the anemone's poison. There are advantages for the anemone too, as the clownfish eats parasites and algae from its tentacles – helping to keep it clean and healthy.

Although this habitat helps keep clownfish safe from predators, they are still at risk from human activities. What do you think these are?

Anemones and clownfish need healthy coral reefs to survive, but lots of human activities like pollution and destructive fishing (including dynamite fishing) are damaging the coral. But the most serious threat to coral reefs is climate change. If the world's oceans get too warm then coral cannot survive and will start to die off, along with the anemones and the clownfish that live within them.

How do you think we can help reduce climate change?

By making small changes to our everyday lives we can all play a part in reducing climate change. We should switch off lights and appliances at the wall if they are not being used, reduce water wastage by switching off the tap when brushing our teeth and choosing to walk or cycle short distances instead of going in the car.

FACT
25% the world's coral reefs are already damaged beyond repair.

FACT
25% of all marine fish species live on coral reefs.

Activity: Coral reefs under threat

Human activity is slowly destroying the world's coral reefs. Ask pupils to find the words related to the threats in the word search on their exploration sheet.

PROTECT

You can help!

Don't touch anything if you go snorkelling and never buy products made from coral or other marine creatures.

RAYS

Visit Area: RAY LAGOON

Rays are strange flat looking creatures that use their wings to glide through the ocean. They live in oceans and seas all over the world, mostly on or near the seabed. A large number of ray species are now vulnerable. Certain species of Skate, Electric Ray and Sawfish are critically endangered.

Questions:

What human activities do you think threaten rays?
Like lots of fish in the ocean, rays are at risk from overfishing. They are often caught in fishermen's nets accidentally whilst they are fishing for other species.

Damage to habitats from coastal development and marine pollution are also common threats to rays.

Can you think of any reasons why humans would try to catch rays deliberately?
In some parts of the world, the Manta Ray is hunted for a part of its body called the 'gill raker'. This is used in traditional medicine, but sadly there is no evidence that it has any (medicinal) value.

Thousands of rays are killed every year for their gill rakers.

Although some species of rays can live for over 50 years, they tend to produce very few babies. Why might this be a problem?
If a species of ray is under threat, it can take a lot longer for it to naturally increase its population again. If the population continues to decline quicker than it can recover, there is a risk the species will become extinct.

Do you think rays are dangerous?
Most rays aren't dangerous as they don't have a venomous stinger (called a spine) on their tail, but some rays like the Cownose Ray do, and can use it to defend themselves against predators.

FACT
Rays are a member of the shark family.

FACT
The Manta Ray is the biggest of its species with 'wings' that can span almost 7 metres across!

Activity: Which ray?

Ask pupils to look at the information boards around the display and try to identify the different species of rays. Discuss how they differ.

PROTECT

You can help!

We can help by supporting campaigns to set-up Marine Conservation Zones across the globe. Try to avoid eating skate, it's a member of the ray family.

SEAHORSES

Visit Area: SEAHORSE TEMPLE

Seahorses are one of the most fascinating creatures in our ocean. There are around 33 different species, but sadly many of these are now endangered due to human activity. As many as 150 million seahorses are killed every year to provide ingredients for traditional medicines, which is just one of many threats they face.

Questions:

When a seahorse finds a partner that it likes, most will stay together for the rest of their lives. Why do you think this is a problem for their survival?

If a seahorse's partner is killed it can take a very long time for it to find another one. Sometimes it may never find a replacement. This means it will stop reproducing and fewer baby seahorses will be born.

Reports suggest that the number of seahorses in the world has reduced by as much as 50% in the last 5 years. Why do you think so many seahorses are dying out?

Pollution and waste from human activity is destroying their habitat. Seahorses are sold as souvenirs because they keep their shape and texture after drying out. Many end up as ingredients in traditional medicines.

Seahorses are also taken from the wild and sold as pets, but because they are so difficult to look after only 1 in every 1,000 will survive more than 6 weeks in a home aquarium tank.

What do you think SEA LIFE is doing to protect seahorses?

SEA LIFE has one of the biggest breeding networks in the world which is helping to secure the future of over 13 different species. They are also working with scuba divers and fishermen to help map where seahorses are found so that they can be better protected.

FACT
The smallest seahorse is around 1 inch long (about the size of a small paperclip).

FACT
The longest is about 14 inches long (longer than a school ruler.)

Activity: Partners for life

Most seahorses stay with the same partner for their whole lives which can mean that if their partner dies they will stop reproducing. Ask pupils to look at the puzzle and work out which two seahorses are partners.
The correct answer is B & E.

PROTECT

You can help!

A lot of waste ends up in our seas so try to throw less away and recycle as much as you can. Never buy dried seahorses as souvenirs or medicines and other products made from seahorses.

SEA TURTLES

Visit Area: OCEAN TUNNEL

Sea turtles have existed for around 215 million years, making them one of the oldest surviving species on Earth. There are 7 species of sea turtle – Green Sea Turtle, Loggerhead, Hawksbill, Leatherback, Kemp's Ridley, Olive Ridley and Flatback. Sadly 6 of these species are now either endangered or critically endangered.

Questions:

Let's look at why they are becoming endangered. Firstly what do you know about where sea turtles lay their eggs?
Sea turtles always lay their eggs on the same beach they were born on themselves. Sometimes this means travelling for thousands of miles to return to this special spot.

What do you think would happen if humans build on or around this beach?
New buildings and roads could completely destroy the nesting site and the surrounding coral reefs (that sea turtles use for protection from predators). The bright lights from the buildings could also confuse new-born sea turtles when they hatch as they don't know which way to go to get to the sea.

What other dangers do you think sea turtles face from people?
Fishing is a very big problem for sea turtles. Often they become trapped in fishermen's nets and lines. More than 250,000 Loggerheads and Leatherbacks are killed by long line fishing every year. SEA LIFE has set-up Rescue Centres at key breeding sites in Zakynthos (Greece) and in Georgia (USA), as well as a Sanctuary in Manly (Australia). The centres rescue injured and sick turtles and care for them until they are well enough to be released back into the wild.

Sometimes sea turtles aren't caught by mistake. Why do you think people would want to hunt sea turtles?
Even though they are endangered, people in some parts of the world hunt sea turtles to eat their meat or sell their beautiful shells for jewellery or souvenirs.

Activity: Endangered Sea Turtles

Six species of sea turtles are now endangered because of human activities. Ask pupils to solve the clues and unscramble the words about some of the threats faced by sea turtles. The correct answers are 1. Shells 2. Fishing 3. Sea 4. Eggs 5. Sick.

PROTECT

You can help!

Sea turtles often mistake plastic bags floating in the sea for jellyfish and try to eat them. Thousands die every year choking on these plastic bags. It's very important we use a 'bag for life'. We should also never buy souvenirs made of turtle shell.

SHARKS

Visit Area: OCEAN TUNNEL

There are over 350 species of shark in the world, living in all kinds of different habitats from warm tropical waters to icy polar seas. Lots of people are scared of sharks attacking them, but only Great White, Bull and Tiger Sharks can be considered actively dangerous.

Questions:

How many sharks do you think humans kill every year?

Around 70 million sharks are killed every year! Some scientists think that 90% of the world's sharks have disappeared from the oceans in the last 30 years. Because of this lots of sharks are now endangered (or nearly extinct).

Why do you think sharks are killed by humans?

In many countries fishermen catch sharks for their fins, which is used to make shark fin soup. Often, after the fin is cut off, the shark is thrown back into the sea where it helplessly sinks and dies. SEA LIFE is campaigning to ban this horrible way of killing sharks.

Why else might humans try to catch sharks?

Many sharks are also killed by sports fishermen, who like to catch them simply because they are big animals with a ferocious reputation. Lots of fishermen also kill sharks for their teeth and jaws which they sell as souvenirs or ornaments.

Why do you think it is important to protect sharks?

Sharks are really important to underwater ecosystems (the communities they live in). If they are wiped out, the animals beneath them in the food chain will multiply very quickly as they won't be getting eaten by sharks anymore! The prey of these other animals will eventually disappear too, as there are so many predators feeding on them.

FACT
Sharks have existed for over 400 million years.

Activity: Sharks at SEA LIFE

Ask pupils to identify which species of shark live in the SEA LIFE London Aquarium and whether they are endangered or not. Ask them to draw a picture of their favourite species of shark on their exploration sheet. The endangered species are: Great White, Great Hammerhead and Whale Shark.

PROTECT

You can help!

We can help sharks by supporting campaigns to set-up Marine Conservation Zones across the globe. We should also never buy products made from sharks or eat shark fin soup.

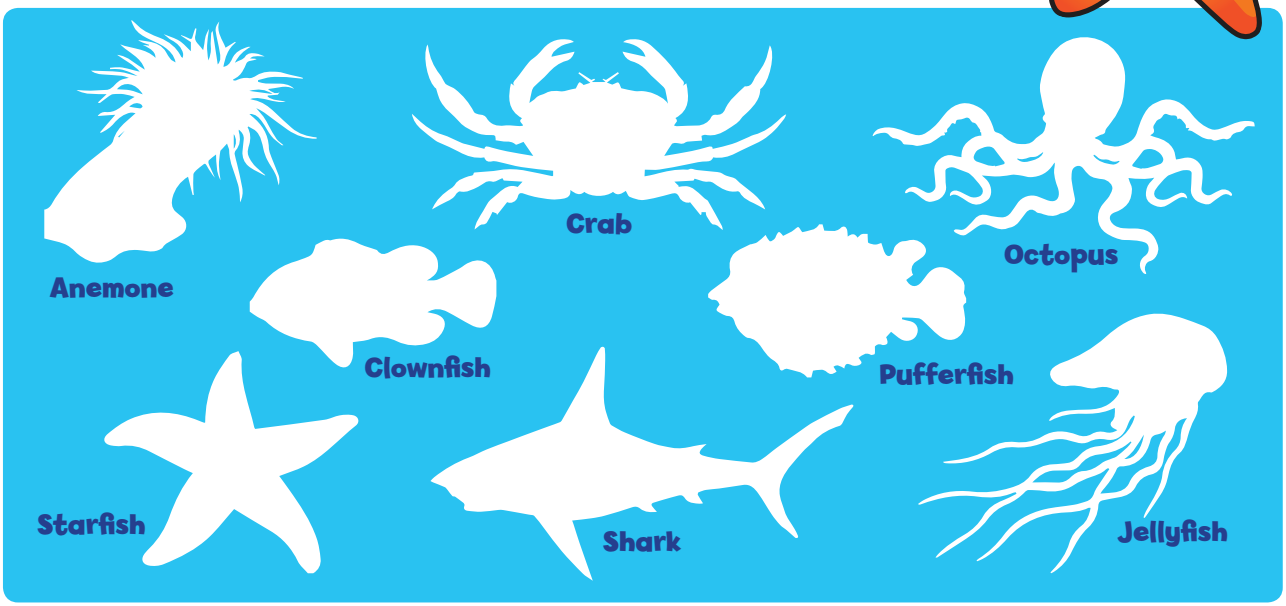
Name:

Find out about conservation

Respecting rockpools

Litter and pollution can destroy the home of rockpool creatures. Find out which creatures live in the rockpool and colour in their shapes when you spot them.

Remember not to remove any animals you find in rockpools.

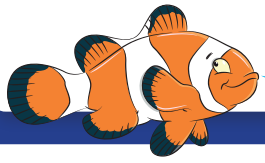


Coral reefs under threat

Lots of different things can threaten coral reefs and destroy the home of creatures like the clownfish. How many of the words below can you find in the word search?

Climate Gases Warming Bleaching Coral Pollution Fishing

B	A	S	L	G	L	E	G	F	C	V	Q
X	P	E	A	Q	T	Z	N	I	O	M	G
G	T	S	M	A	L	K	I	S	R	J	V
G	E	Q	M	W	S	L	M	H	A	U	T
S	M	I	J	R	F	Y	R	I	L	T	I
A	L	H	L	G	Q	X	A	N	Q	W	G
C	O	F	R	O	Z	L	W	G	Z	G	L
N	O	I	T	U	L	L	O	P	S	K	G
T	Z	L	Y	L	V	H	O	I	G	X	B
A	R	H	E	B	V	F	M	A	I	W	G
Y	H	B	V	D	E	L	Y	B	W	G	W
G	N	I	H	C	A	E	L	B	M	H	Z



A quarter of the world's coral reefs are already destroyed.

Partners for life

Most seahorses stay together for life, so it's important human activity doesn't split them up. Look at the puzzle below and work out which two seahorses are partners.

Answer here

Seahorses can look forwards and backwards at the same time!

Find out about conservation

Endangered Sea Turtles

Unscramble these words about some of the threats faced by sea turtles.

1. Sadly some people hunt sea turtles for their beautiful:

S E L H L S

_ _ _ _ _ _

2. Sea turtles can get caught in nets and lines used for:

I G N F I H S

_ _ _ _ _ _ _

3. Often sea turtles mistake lights from houses for the:

A E S

_ _ _

4. New buildings and roads can destroy areas where sea turtles lay their:

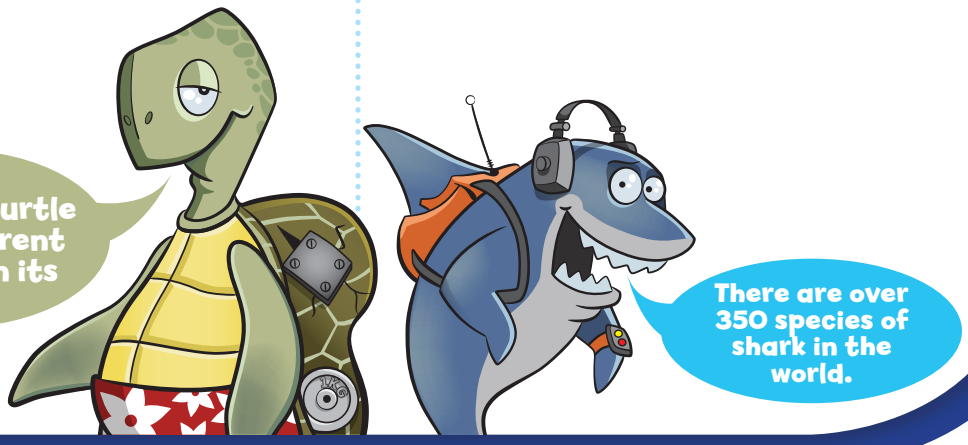
G E G S

_ _ _ _

5. SEA LIFE rescues and cares for sea turtles that are injured or:

K C S I

_ _ _ _



Sharks at SEA LIFE

Find out which species of shark are kept at this SEA LIFE London Aquarium and whether they are an endangered species or not.

Great Hammerhead Shark

◯ Endangered
◯ Not endangered

Great White Shark

◯ Endangered
◯ Not endangered

Sand Tiger Shark

◯ Endangered
◯ Not endangered

Nurse Shark

◯ Endangered
◯ Not endangered

Blacktip Reef Shark

◯ Endangered
◯ Not endangered

Whale Shark

◯ Endangered
◯ Not endangered

Draw a picture of your favourite species of shark in the space below.