

Lesson Summary

Sea turtles are under threat from a number of human interactions including pollution, coastal development, abandoned fishing gear, by-catch in commercial fishing nets and poaching.

This lesson will take approx. 45 mins.



Subjects relevant to

English, Geography, History, Science and Social Science.

Learning objectives

From this lesson students will:

- Learn and discuss about sea turtles.
- Understand why sea turtles are endangered.
- Discuss ways to protect sea turtles.

Preparation

- This lesson has been designed to provide a complete lesson, but can be stopped at any time and split over multiple lessons, should you wish to include your own discussion/questions or incorporate the lesson activities.
- Definitions of key terms have been provided at the end of the guide to assist with the learning process.
- Each lesson has case study options showing Sea Shepherd campaigns, including videos to provide students with a firsthand experience of ocean conservation in action.
- Depending on whether students are working in a classroom or remotely, you can choose to discuss questions in the class or use the online learning app.
- This digital lesson has an interactive option called student devices. If you choose this option ask the students to bring their mobile phones or tablets to the lesson.
- Should you choose the interactive option, it will run a quiz during the lesson. Recommendation: only use this interactive option in classes of up to 30 students.
- Students can sign up on their mobile device to the www.LessonUp.app. They will be asked for a PIN code (this will appear automatically on slide 3 and will also show at the bottom of the screen). Students who sign up under a false name may be removed by the teacher.
- Students who do not have a mobile device can join the quiz with another student.
- If student devices is turned ON, you can opt to turn the sound and the share screen ON or OFF. Further on you can choose if you want to 'show ranking after each quiz' question. Doing so will create a competitive element, but it can be distracting. Recommendation: turn the 'show ranking after each quiz' OFF.
- The abovementioned options will also show if you click on the PIN code at the bottom of the screen.

Lesson plan

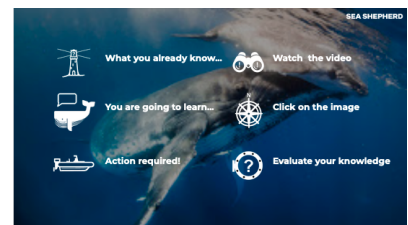
Slide 1 Introduction

This lesson is provided by Sea Shepherd. Sea Shepherd is a marine conservation organisation with a mission to protect the ocean and marine wildlife. Sea Shepherd works globally on a range of issues impacting the ocean, running numerous direct action campaigns each year. Sea turtles are one species Sea Shepherd is helping to protect.



Slide 2 Lesson action icons

During the lesson we will use these icons to identify the learning actions.



Slide 3 Lesson summary

This lesson focuses on sea turtles and the reasons why they are endangered.

INTERACTIVE JOIN – ask students to go to www.LessonUp.app



Slide 4 Empty ocean by 2050

Scientists estimate that by 2050 the ocean ecosystem will be on the verge of collapse, empty of fish and marine wildlife, unless urgent action is taken on the issues impacting the ocean and marine wildlife.

Show this video (2.53min), which explains how important all species are to our planet:

<https://www.youtube.com/watch?v=TLcA31VRIRU>



Discuss the video with the class and what it means.

Slide 5 Sea Turtles

Sea turtles as a species have existed since the time of the dinosaurs, with the current evolution of sea turtles appearing over 100 million years ago.



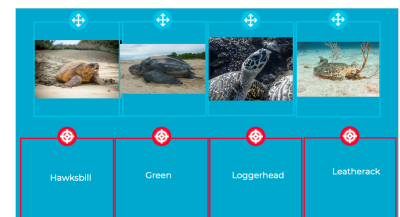
Slide 6 Sea Turtle species

There are 7 main sea turtle species
Ask students to name the sea turtle species they know.



Slide 7 Match the images.

Match the image of the sea turtle to its name.



Slide 8 Hawksbill and Olive Ridley

Ask students to share facts they know about these species of sea turtle:

- What are the shells made of?
- How long can they dive for?
- How long do they live?
- What do they eat?

The 7 species of sea turtles are:

Hawksbill

- Weight up to 70kg (154pounds) 90cm (3 feet).
- Hawks beak, which allows them to get food from coral reefs.
- 2 claws on front flippers.

Olive Ridley

- 70 cm (2.5 feet) 45kg (100pounds).
- Olive green shell colour.
- The front and rear flippers have a claw.



Slide 9 Kemp Ridley and Green

Ask students to share facts they know about these species of sea turtle:

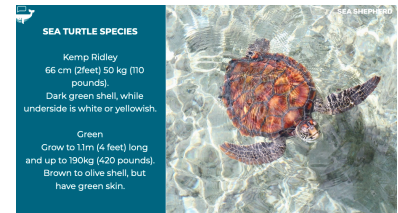
- What are shells made of?
- How long can they dive for?
- How long do they live?
- What do they eat?

Kemp Ridley

- 66 cm (2feet) 50 kg (110 pounds).
- Dark green shell, while underside is white or yellowish.

Green

- Grow to 1.1m (3.5 feet) long and up to 190kg (420 pounds).
- Brown to olive shell, but have green skin.



Slide 10 Loggerhead, Leatherback and Flatback sea turtles

Ask students to share facts they know about these species of sea turtle:

- What are the shells made of?
- How long can they dive for?
- How long do they live?
- What do they eat?

Loggerhead

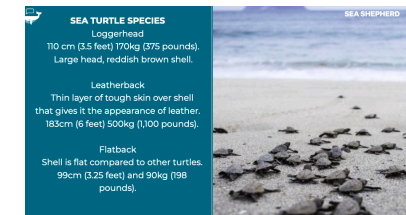
- 110 cm (3.5 feet) 170kg (375 pounds).
- Large head, reddish brown shell.

Leatherback

- Thin layer of tough skin over shell that gives it the appearance of leather.
- 183cm (6 feet) 500kg (1,100 pounds).

Flatback

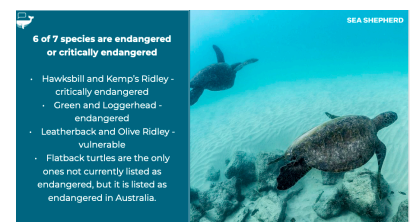
- Shell is flat compared to other sea turtles.
- 99cm (3.25 feet) and 90kg (198 pounds).



Slide 11 Endangered status of sea turtles

6 of the 7 species are currently endangered or critically endangered:

- Hawksbill and Kemp's Ridley - critically endangered.
- Green and Loggerhead - endangered.
- Leatherback and Olive Ridley - vulnerable.
- Flatback turtles are the only ones not currently listed as endangered, but it is listed as endangered in Australia.



Slide 12 Predators

Sea turtles have a tough start to life. Hatchlings face a lot of hazards just trying to make it to the ocean and survive their first few years.

Many hatchlings fall prey to crabs and birds as they make their way into the sea. Animals like foxes will dig up the nests and eat the eggs, as well as attack the mums when they come ashore to nest.

In the ocean hatchlings face threats from large fish and sharks, whilst adult turtles will fall prey to sharks, seals and orcas.



Slide 13 Early years

Turtles drift on ocean currents during the early years of their life before moving in closer to shore to feeding grounds. They will travel long distances to find their feeding ground or to nest on a beach.

Turtles are slow growing and take decades to reach maturity. They can live as long as humans do, and sometimes longer.

Only 1 out of 1,000 sea turtles survives to adulthood from the eggs hatched.



Slide 14 Why are sea turtles endangered?

Ask students to answer via www.LessonUp.app or discuss in classroom:

“What do you think are the main reasons why sea turtles are endangered?”



Slide 15 Poaching

Poaching – Intentionally hunted by humans.

Ask students to answer via www.LessonUp.app or discuss in classroom:

“Why do you think sea turtles are widely taken by poachers?”

“What do they use them for?”



Slide 16 Poaching

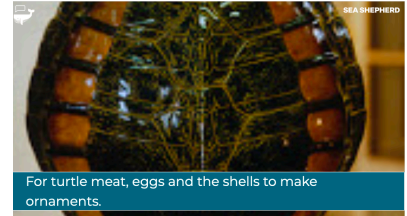
The main reasons for poaching are:

- Turtle meat.
- Eggs taken for food.
- Shells – used to make ornaments and jewellery, often for tourists.

Female turtles come ashore for nesting season, where they lay their eggs on beaches.

Sea turtles are slow moving and spend a lot of time digging a nest, laying eggs, burying the eggs and then heading back to sea again. Poachers wait until the eggs are laid and then attack the female turtle.

Female turtles often nest on the same beach where they were born. Nesting season is a regular occurrence, so poachers know what time of year to monitor the beaches and watch for turtles.



For turtle meat, eggs and the shells to make ornaments.

Slide 17 By-catch by commercial fishing

Sea turtles often get caught in commercial fishing nets. If the sea turtle becomes trapped and can't get to the surface to breathe, the sea turtle will drown.

Hundreds of thousands of sea turtles die each year in commercial fishing nets.



By-catch in commercial fishing nets.

Slide 18 Entanglement in fishing gear

Commercial fishing nets abandoned, lost or dumped overboard from fishing vessels are also dangerous for sea turtles and other species.

They float in the ocean like death traps waiting to catch unsuspecting marine life. They are referred to as ghost nets. For more information on this topic see the Lesson: Abandoned, Lost and Discarded fishing gear.



Entangled in abandoned, lost or discarded fishing gear.

Slide 19 Coastal development impacting nesting sea turtles

In many nesting areas the beaches have been developed for recreation and tourism. People don't take any notice of the sea turtles and will drive cars on beaches, crushing the eggs in their nests or letting their dogs run loose on the beaches attacking the nesting sea turtles.

Sea turtles are also losing their feeding grounds close to shore. In many areas, the seabed is being destroyed by shipping and chemicals used in farming and industries, which are washing into the ocean.



Coastal development impacting nesting sea turtles.

Slide 20 Oil spills

Oil spills leave marine wildlife coated in oil and unable to breath. The dispersants used to break up oil on the surface causes the oil to drop to the ocean floor, coating it in a sludge.

This coating affects the health of the seafloor, killing sea grasses and any other life. Sea grass is part of the food chain for sea turtles.



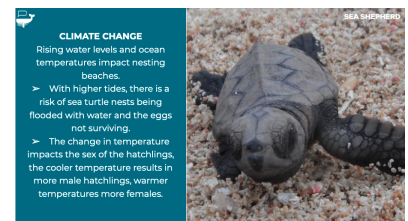
Slide 21 Climate change

Rising water levels (and tides) and warming air and ocean temperatures are impacting sea turtle nesting beaches.

There are two impacts

- With higher tides, there is a risk of sea turtle nests being flooded with water and the eggs not surviving.
- The change in temperature impacts the sex of the hatchlings, the cooler temperature results in more male hatchlings, warmer temperatures more females.

Scientists are finding with the warmer temperature most hatchlings are female. This creates a further issue for an already endangered species.



Slide 22 Plastic pollution

Plastic pollution is an issue for all marine wildlife.

Each year over 12 million tonnes of trash finds its way into the ocean, adding to pollution already there.

What do you think happens if turtles find rubbish in the ocean?

Turtles can't distinguish the difference between rubbish and food, and when they do it may be too late and they may already have swallowed it, or been entangled in it.



Slide 23 Protecting sea turtles

There are International laws in place that state it is illegal to carry sea turtle parts or products between countries. However, most items are sold locally.

Endangered species, like sea turtles, are also protected under CITES (Convention on International Trade of Endangered Species).

Countries who have signed up to CITES must prohibit any trade in sea turtles or anything made from them.



Slide 24 Protecting sea turtles

Conservation groups like Sea Shepherd and local activists patrol beaches to protect nesting sea turtles from poachers.

In high risk areas sea turtle eggs are removed from the nest and are taken to hatcheries, where they can be kept safe until they hatch and will have a chance to make it to the ocean.



Slide 25 How can you help protect sea turtles?

Ask students to answer via www.LessonUp.app or discuss in classroom.

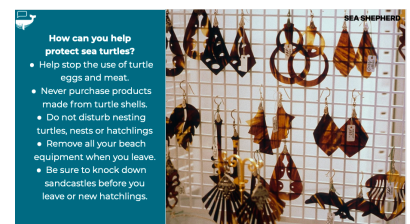
“How do you think you could help protect sea turtles?”



Slide 26 Protecting sea turtles

Ways to help protect sea turtles:

- Help stop the use of turtle eggs and meat by spreading awareness about how endangered the species are.
- Never purchase products made from sea turtle shells.
- Do not disturb nesting sea turtles, nests or hatchlings.
- If visiting nesting beaches ensure you remove your beach equipment. Eg. beach chairs, umbrellas and children's toys, so turtles can come ashore and hatchlings find their way to the ocean.
- Be sure to knock down sandcastles before you leave because they become obstacles for nesting turtles or new hatchlings.

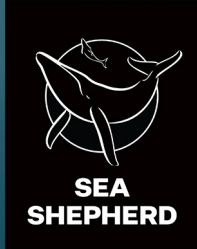


Slide 27 Reduce plastic pollution

Help reduce plastic pollution to protect sea turtles. Participate in beach clean-ups.

Discuss ways to reduce plastic pollution.





SEA TURTLES

TEACHERS GUIDE: SEONDARY SCHOOL (Age 11 – 16)

Slide 28 Question

Ask students to answer via www.LessonUp.app or discuss in classroom.

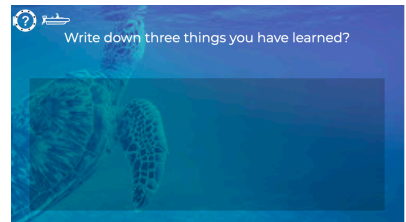
“Name 5 issues impacting sea turtles?”



Slide 29 What did you learn?

Ask students to answer the following question using www.LessonUp.app or discuss in the classroom.

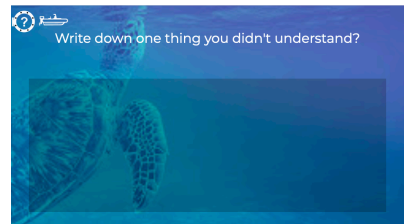
“Write down three things you have learned?”



Slide 30 What don't you understand?

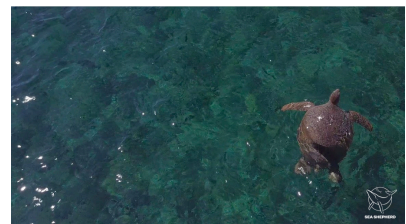
Ask students to answer the following question using www.LessonUp.app or discuss in the classroom.

“Write down one thing you didn't understand?”



Slide 31 Case Studies

Sea Shepherd Case Studies cover a number of Sea Shepherd campaigns and show video of some of our work to protect sea turtles. These can be used to enhance the learning experience from these lessons.



Slide 32 Close



Case Study Options

Case Study – Operation Jairo
Case Study – Operation Nyamba
Case Study – Operation Albacore
Case Study – Operation Sola Stella
Case Study – Ghostnet Campaign
Case Study – Plastic Pollution

Key Definitions

By-catch - is basically anything that is caught in fishing nets or on lines that the fishermen don't want or are not allowed to legally sell.

CITES - Convention on International Trade of Endangered Species.

Coastal development - includes an array of human activities including beachfront construction of homes, hotels, restaurants and roads.

Ecosystem - a biological community of interacting organisms and their physical environment.

Endangered - seriously at risk of extinction.

Entangled - to become twisted together with or caught in.

Extinction - the state or process of being or becoming extinct. No longer in existence.

Ghostnets - abandoned, lost and discarded nets that float in the ocean trapping marine wildlife.

Hatchling - a young animal that has recently emerged from its egg.

Marine pollution - a combination of chemicals and trash most of which comes from land sources and is washed or blown into the ocean.

Migration - to go from one country, region or place to another.

Poaching - illegally hunt or catch (marine mammals or fish) or in contravention of official protection.

Threatened - vulnerable or at risk; endangered.

YOUR FEEDBACK

We value your feedback and would be pleased to hear your thoughts about this lesson and activities. Any comments, suggestions or requests for further information can be sent to education@seashepherdglobal.org.