C1 KNOW FEEL ACT! to Stop Marine Litter

ALL TIED UP

In this activity, learners "experience" what marine animals may feel when entangled in litter items. The activity can serve as a stimulus for further exploration on ingestion and entanglement and the threats they pose to marine life.

SUBJECTS

Environmental Studies, Language, Arts

LEARNERS' AGE

10-12 yrs or younger

DURATION

15 minutes

OBJECTIVES

- To "experience" entanglement caused by marine litter.
- To practise empathy or the capacity to identify with emotions experienced by another being.
- To be aware of the threats that entanglement by marine litter poses to marine life.

INTERNET SOURCES

www.unep.org/regionalseas/marinelitter/about/effects/default.asp

Just like humans, animals need a healthy and safe environment in which to live. Waste that ends up as marine litter can harm animals living in or near the sea in many ways: litter objects can entangle, maim and even cause drowning. In other cases, animals mistake litter objects for food which cause choking and/or starvation. In fact, entanglement and ingestion are the primary threats marine litter poses to marine wildlife.

Entanglement results when an animal becomes encircled or ensnared by a litter item. This happens because marine animals are often attracted to them as part of their normal behaviour or out of curiosity (for example, playing with litter items or using them as shelter).

Entanglement can cause wounds leading to infection or loss of limbs, strangulation, choking, or suffocation. It can impair an animal's ability to swim, find food, escape from predators and eventually cause drowning.

Fishing nets that have been accidently lost or deliberately discarded may continue to catch fish for very long periods of time as they drift in the sea or along the bottom. This is otherwise known as "ghost fishing". Their "catch" attracts other fish, mammals and sea birds looking for food and they too, are often caught or entangled, resulting in a vicious, fatal circle.

Ingestion occurs when an animal swallows marine litter. It can happen accidentally or inadvertently (e.g. filter feeding organisms). But in general, animals ingest litter because it looks like food. For example, turtles eat plastic bags mistaking them for jellyfish; birds feed on or feed their young with plastic pellets mistaking them for fish eggs or crabs.

Ingestion can lead to choking, malnutrition or starvation if the ingested items fill the animal's stomach. Sharp objects such as metal, glass or plastic can injure the digestive tract and cause infection and pain. Ingested items may also block the animal's air passage eventually causing death by suffocation. The stomachs of birds of prey and other carnivorous animals have been found with large concentrations of plastics, rope, nets and all kinds of waste that have come from human activities.

Marine organisms can also be exposed to toxic chemicals released from litter items. These chemicals can directly enter organisms that have ingested plastics or indirectly if they have eaten other organisms that have ingested plastics themselves. Even though the adverse effects of these chemicals on organisms are well established, there is still considerable uncertainty on their role in the transfer of chemicals to wildlife or the food chain.

A lesser known fact is that some species attach themselves or "ride" on litter items, invading waters they would normally never reach. As these species establish themselves in a new environment, interaction with native populations can pose threats to the biota and ecosystems. This phenomenon is known as alien species invasion and is one of the most significant threats to global biodiversity.

Marine litter can also harm benthic habitats. Discarded fishing gear causes serious damage to coral reefs as they scrape and break them. As litter items reach the bottom of the sea they cover benthic communities (e.g. a wide piece of plastic, a rug) depriving them of oxygen and thus "smothering" them. Heavy machinery often used to remove litter from coasts can also damage sedimentary habitats.

A seagull with an aluminum can around its neck
© Nina Kristin Nilsen / Marine Photobank

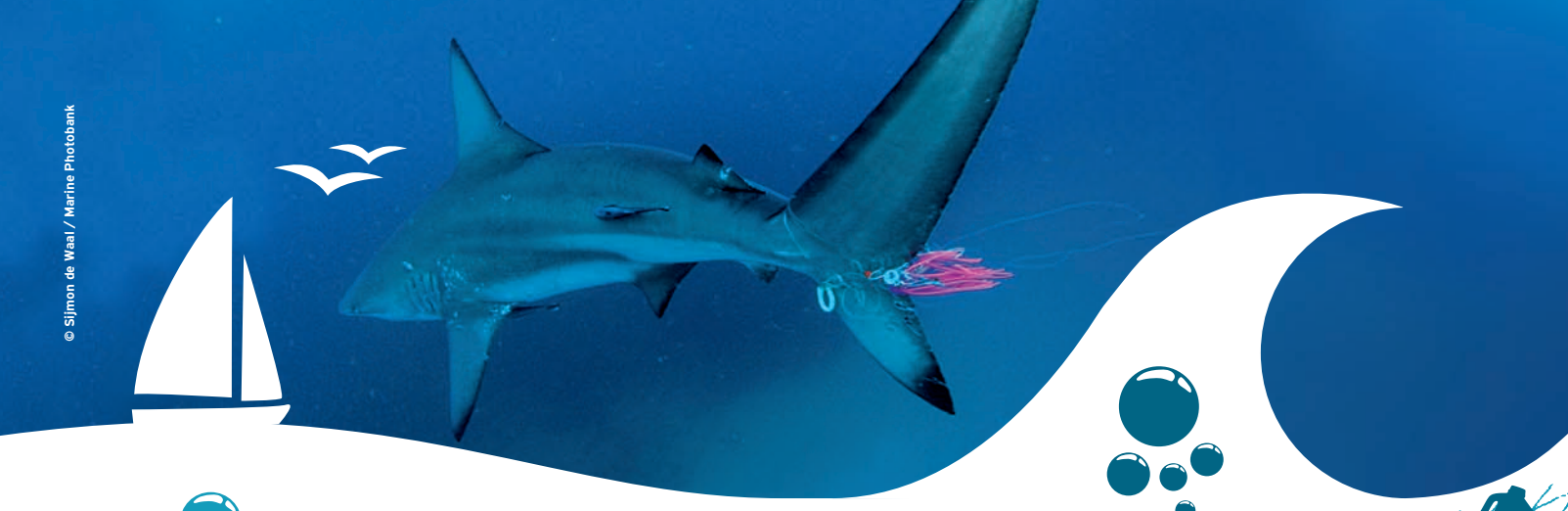
Lesser Black Backed gull trapped by discarded waste plastic ring
© David Cayless / Marine Photobank

Rope left on shark tail
© Andrew J Burns / Marine Photobank

Entangled starfish
© Peri Paleracio / Marine Photobank

Fish with bottle ring, Mexico
© Martin Porta / Marine Photobank

Ghost fishing in action
© Sijmon de Waal / Marine Photobank



Materials and Equipment

A couple of thin rubber bands for each learner
A small bicycle tire, a piece of rope or piece of cloth long enough to be tied around a human body

Instructions step by step

The educator hooks the rubber band over a volunteer learner's little finger, passing it over the back of the hand and hooking it over the other side to the thumb. The educator repeats this using 1 or 2 more rubber bands, entangling a different finger every time. The learner should start to feel the gripping effect of the rubber band on the hand. The learner is asked to try to free his/her hand from the rubber band without using the thumb nor the other hand.

Learners reflect on the following questions:

- How would you feel after struggling like this all morning?
- How would you feel after missing breakfast?
- What would happen if you continued missing meals and using all your strength fighting to break free?

The educator uses a ring-shaped item such as a bicycle tire or a piece of tied rope or cloth, or a belt fixing it around a volunteer's body and arms or alternatively around his/her waist. The learner should try to remove it without using his/her hands -just like an animal with no hands such as a fish would have to do.

In class, discuss the most responsible way to dispose of these and other similar waste items.

These activities simulate entanglement using a rubber band and bicycle tire. They should be performed only by the educator on a volunteer learner taking care not to injure him/her in any way!

Extension activity

Learners arrange to interview a fisherman or a marine scientist to ask about their experiences in terms of wildlife entanglement and other incidents relating to marine litter. In any case, learners prepare their questions in advance.

MARLISCO
Stopping Marine Litter Together