Teacher resources - Lesson plan

Recycle me

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Australian Curriculum Objectives

Years 3 & 4 (Stage 2) - Science

- AC9S3H02 / AC9S4H02
  Consider how people use scientific explanations to meet a need or solve a problem

Years 3 & 4 (Stage 2) - HASS

- AC9HS3S05 / AC9HS4S05
  Draw conclusions based on analysis of information
- AC9HS3S06 / AC9HS4S06
  Propose actions or responses to an issue or challenge that consider possible effects of actions

Years 3 & 4 (Stage 2) - English

- AC9E3LY07
  Plan, create, rehearse and deliver short oral and/or multimodal presentations to inform, express opinions or tell stories, using a clear structure, details to elaborate ideas, topic-specific and precise vocabulary, visual features, and appropriate tone, pace, pitch and volume
- AC9E4LY07
  Plan, create, rehearse and deliver structured oral and/or multimodal presentations to report on a topic, tell a story, recount events or present an argument using subjective and objective language, complex sentences, visual features, tone, pace, pitch and volume

Years 3 & 4 (Stage 2) - Design & Technologies

- AC9TDE4P03
  Select and use materials, components, tools, equipment and techniques to safely make designed solutions

Years 5 & 6 (Stage 3) - Science

- AC9S5H02 / AC9S6H02
  Investigate how scientific knowledge is used by individuals and communities to identify problems, consider responses and make decisions
- AC9S5U01
  Examine how particular structural features and behaviours of living things enable their survival in specific habitats

Years 5 & 6 (Stage 3) - HASS

- AC9HS5S06 / AC9HS6S06
  Propose actions or responses to issues or challenges and use criteria to assess the possible effects
- AC9HS5S07 / AC9HS6S07
  Present descriptions and explanations, drawing ideas, findings and viewpoints from sources, and using relevant terms and conventions

ACTIVITY INSTRUCTIONS

World Ocean Day

World Ocean Day is celebrated around the world on 8th June each year. In this activity, learners investigate what taking care of the ocean involves for the people who catch our fish. They look at stories of real fishers taking steps to look after the ocean and find out what fishing sustainably really means in practice. Afterwards, they can take part in our competition to come up with their own idea to help fishers protect our ocean.

Introduction (5 mins)

Ask learners to think about a time they have received a sticker. Discuss with learners what they got their sticker for, how they felt when they received it and what the sticker looked like.

Main Activity (40-45 mins)

Introduce the Marine Stewardship Council blue fish tick to learners:

The Marine Stewardship Council (MSC) works to reward sustainable fishing practices, but just like learners might get a sticker as a reward for effort or achievement, only fishers who pass the tests to show that they are fishing sustainably are rewarded with the MSC blue fish tick – like a 'sticker' for their fish. Get more information about the MSC's approach and what the MSC blue fish tick means here.

Split learners into five groups and ask them to nominate someone to write, someone to draw, and at least two people to speak. Explain they will investigate what sustainable fishing means in practice for fishers.

Provide each group with copies of one of the Sustainable Fishing Factsheets and ask them to look at it together. As a group they complete the short Sustainable Fishing: Challenges and Solutions worksheet, create a simple slogan, diagram or poster about sustainable fishing, and present as a group for a minute or two about what they found out.

Discussion (5-10 mins)

Ask learners what they think about the MSC blue fish tick as a simple sticker on their food with a complex story behind it. Instruct learners to write a sentence or explain to a partner what they think about the MSC blue fish tick and what sustainable fishing means.

Don't forget to give learners a sticker for completing their presentation!

Kahoot quiz link
Password: 009096441

SUSTAINABLE FISHING: FACTSHEET 1

At the MSC, we love getting to the bottom of it!

Fishing sustainably is not as easy as you might think. To get their sticker – the MSC blue fish tick – the people who catch our fish must pass a lots of tests. This process is called **certification**.

To get certified, fishers must prove that they are fishing at **sustainable levels**, so that there are enough fish in the sea to keep on fishing. They often get help from scientists to collect data about the ocean. Fishers also have to work with other fishers to follow fishing rules and minimise their impact on the ocean ecosystem.

The tests are developed by **independent ocean experts** and can take 1-3 years. Fishers often need to make changes to how they are fishing. Then they can get their sticker.

They may have to keep improving and they must complete tests every year, or they could lose their sticker!

The challenge

- Some fishers use fishing nets that move along the sea floor over 1000m below the surface
- MSC certified fishers have to minimise damage to ocean ecosystems
- It is hard to know what impact they might be having on the ocean floor when they can't see it
- Fishers need to understand what's going beneath the surface

The solution

Only about 20% of the world's ocean floor has been mapped. In Greenland, scientists and fishers are working together to make a new map of it. The scientists can identify vulnerable species that fishers should avoid, like **bubblegum corals**, **sponges** and **seapens**. So far they've found over 230 groups of organisms living on the ocean floor!

Trawling nets that move along the sea floor

SUSTAINABLE FISHING: FACTSHEET 2

At the MSC, we like scarecrows in the ocean!

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To get certified, fishers must prove that they are fishing at **sustainable levels**, so that there are enough fish in the sea to keep on fishing. They often get help from scientists to collect data about the ocean. Fishers also have to work with other fishers to follow fishing rules and minimise their impact on the ocean ecosystem.

The tests are developed by **independent ocean experts** and can take 1-3 years. Fishers often need to make changes to how they are fishing. Then they can get their sticker.

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The challenge

- Seabirds are an essential part of a healthy ocean ecosystem
- But they can end up as *bycatch* – fish and other marine animals that fishers catch when they don't want to
- Birds are often attracted to fishing boats looking for an easy meal – when they hunt fish behind fishing boats they can sometimes get tangled up

The solution

To help birds avoid getting tangled in fishing nets, fishers can try to scare them away using bird-scaring or "tori" lines. Tori lines are rope with brightly coloured streamers hanging down off the stern (back) of the fishing boat. The streamers warn the seabirds not to come near. Making this change has helped the MSC hake fishery in South Africa reduce seabird mortalities by 90%, and achieved a 99% reduction in albatross deaths.

Tori lines hanging off the back of a fishing boat

A seabird known as a 'black-browned albatross'

SUSTAINABLE FISHING: FACTSHEET 3

At the MSC, we love to leave the lights on (well, sometimes)!

Fishing sustainably is not as easy as you might think. To get their sticker – the MSC blue fish tick – the people who catch our fish must pass a lots of tests. This process is called **certification**.

To get certified, fishers must prove that they are fishing at **sustainable levels**, so that there are enough fish in the sea to keep on fishing. They often get help from scientists to collect data about the ocean. Fishers also have to work with other fishers to follow fishing rules and minimise their impact on the ocean ecosystem.

The tests are developed by **independent ocean experts** and can take 1-3 years. Fishers often need to make changes to how they are fishing. Then they can get their sticker.

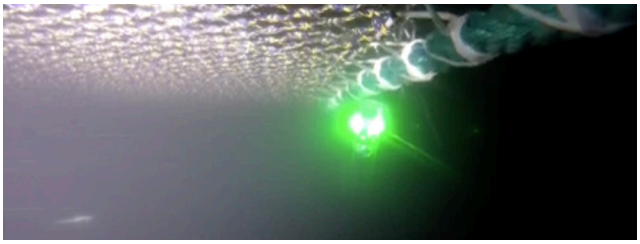
They may have to keep improving and they must complete tests every year, or they could lose their sticker!

The challenge

- Fishers with MSC certification are always looking for new ways to avoid bycatch
- Bycatch means catching a species that fishers don't want – it could be dolphins, turtles or a type of fish they aren't allowed to catch or can't sell
- This includes the endangered Candlefish, a small and beautiful silvery fish that lives in the Pacific Ocean
- Fishers catching shrimp can end up catching Candlefish too

The solution

Scientists found that placing LED lighting on nets reduces Candlefish bycatch by 80-90%. This research led to 100% of fishing boats in the area using LED lights. Scientists don't know why the LED lights work! But the best theory is that the light shows the fish how to escape, or that it warns the fish to move downwards under the net.



LED lighting on shrimp nets

Candlefish bycatch is reduced by 80-90%

SUSTAINABLE FISHING: FACTSHEET 4

At the MSC, we love filling the ocean with bananas!

Fishing sustainably is not as easy as you might think. To get their sticker – the MSC blue fish tick – the people who catch our fish must pass a lots of tests. This process is called **certification**.

To get certified, fishers must prove that they are fishing at **sustainable levels**, so that there are enough fish in the sea to keep on fishing. They often get help from scientists to collect data about the ocean. Fishers also have to work with other fishers to follow fishing rules and minimise their impact on the ocean ecosystem.

The tests are developed by **independent ocean experts** and can take 1-3 years. Fishers often need to make changes to how they are fishing. Then they can get their sticker.

They may have to keep improving and they must complete tests every year, or they could lose their sticker!

The challenge

- Fishers with MSC certification are always looking for new ways to avoid *bycatch*
- Bycatch means catching a species that fishers don't want
- Bycatch can be dolphins, turtles or any type of animal they aren't allowed to catch or can't sell
- Some species, like harbour porpoises, are attracted to fishing grounds as they hunt for food, and can get caught in fishing nets

The solution

The Banana Pinger is an acoustic device that fishers can attach to fishing nets. Acoustic means that it makes a noise. It sends underwater sound waves to deter harbour porpoise from getting too close to nets. Scientific studies have shown pingers to reduce harbour porpoises getting caught in fishing gear by up to 92%.

Banana pingers deter porpoises

A fisherman attaching a banana pinger to a net

SUSTAINABLE FISHING: FACTSHEET 5

At the MSC, we love taking time off (sometimes)!

Fishing sustainably is not as easy as you might think. To get their sticker – the MSC blue fish tick – the people who catch our fish must pass a lots of tests. This process is called **certification**.

To get certified, fishers must prove that they are fishing at **sustainable levels**, so that there are enough fish in the sea to keep on fishing. They often get help from scientists to collect data about the ocean. Fishers also have to work with other fishers to follow fishing rules and minimise their impact on the ocean ecosystem.

The tests are developed by **independent ocean experts** and can take 1-3 years. Fishers often need to make changes to how they are fishing. Then they can get their sticker.

They may have to keep improving and they must complete tests every year, or they could lose their sticker!

The challenge

- MSC certified fishers around the world may have to stop fishing for many reasons
- Stopping can help fish stocks to recover, or make sure that seabirds have time to breed or grow without being disturbed
- For some fish species, it's better not to fish for them the whole year round, so that they can breed, grow and increase their numbers

The solution

The AGAC Four Oceans Tropical Tuna Fishery's boats fish for yellowfin tuna in the Pacific ocean. To be MSC certified they must stop fishing for at least 72 days at a time in certain areas. This helps increase the number of tuna. Scientists work with the fishers to check that the tuna population is stable – that it is not changing. These regular checks help the fishers keep their MSC certification.

Tuna need time to reproduce to increase their numbers

MSC certified fishers not fishing to help fish stocks recover

SUSTAINABLE FISHING: ACTIVITY

Answer the following questions to help prepare your presentation

Solving the challenge of:	**Bycatch/overfishing/damaging the environment**
What did you find out about this challenge?	
Write down one thing that surprised you about this challenge	
Write a sentence to describe a way that scientists and fishers are tackling this challenge	
What do you think about what the fishers and scientists are doing? Why?	
What else do you think could be done to help overcome this challenge?	

Now answer these!

Stickers!	
I have received a sticker for...	
Getting a sticker made me feel...	
Because...	
What do you think about what the fishers and scientists are doing? Why?	
What else do you think could be done to help overcome this challenge?	