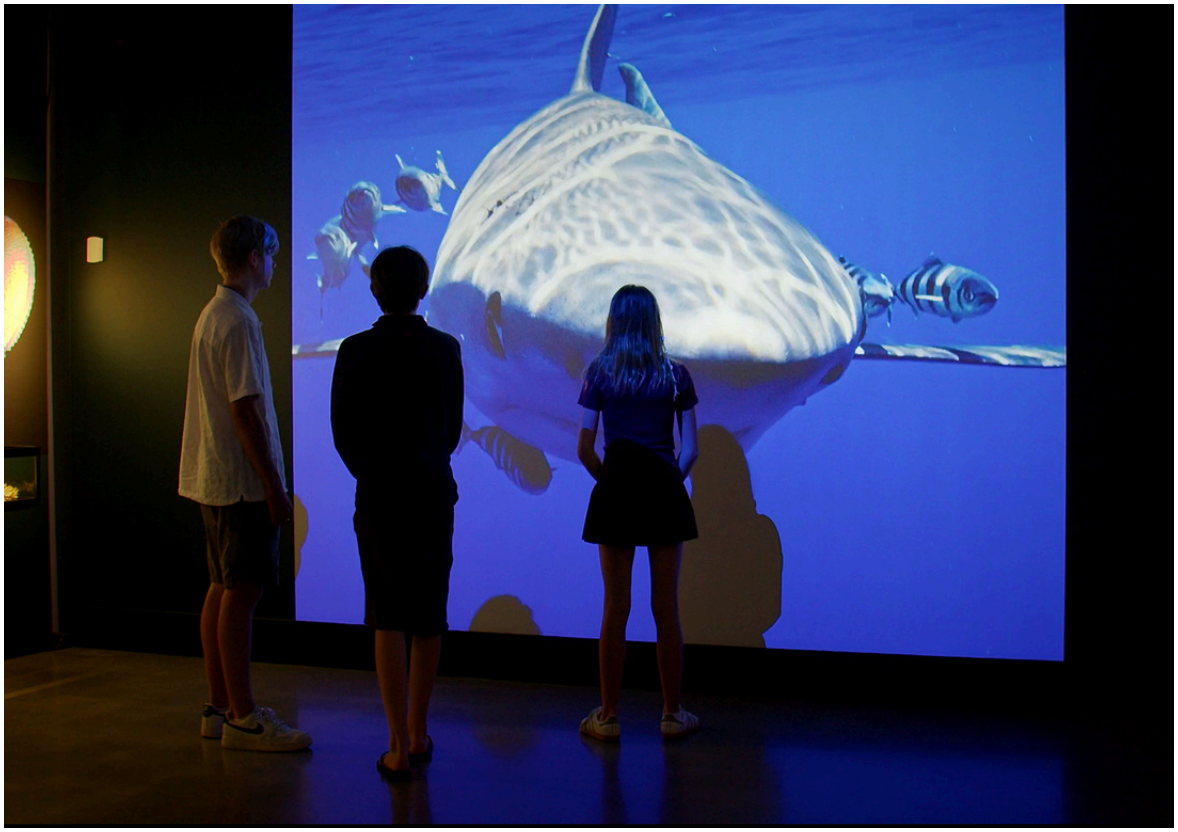
Ocean literacy
and Te Moana-nui-a-Toi

Online Teaching Resource
Years 4 -8



New Zealand
Maritime Museum
HUI TE ANANUI A TANGAROA

Table of Contents

Background information

Immerse yourself in the deep blue of Te Moana-nui-a-Toi: the outer islands of the Hauraki Gulf Marine Park. Experience the wonder of the creatures that visit this important area, as they have done for thousands of years.

Purpose

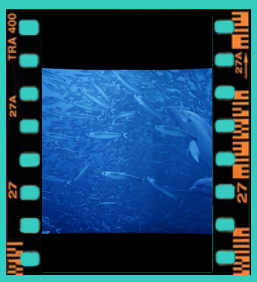
This teaching resource aims to support learning in the Ngā Huhua - Abundance Exhibition at Hui Te Ananui a Tangaroa: New Zealand Maritime Museum. It aims to raise awareness of the global significance of Te Moananui-a-Toi, its biodiversity and those working to protect it, to present opportunities for action.

The exhibition "Ngā Huhua: Abundance" celebrates marine life within the park, through storytelling and sharing scientific thinking, as well as mātauranga Māori.

It emphasises the importance of various species in maintaining the ecosystem's balance, which is threatened by climate change and human activity. The interactive displays and ancestral narratives invite visitors to connect with this vital marine environment.

The exhibition was produced in partnership with Ngāti Rehua Ngātiwai ki Aotea, the area's mana whenua.

Witness a virtual experience of the Ngā Huhua: Abundance exhibition
Ngā Huhua video



Icons used in the resource

Discussion/ debate

Video clip

Worksheet or writing activity

Explore through posters or fact sheet

Ocean literacy

Ocean literacy

Ocean literacy is about understanding the importance of the moana/ ocean, its biodiversity and how to protect it. It is recognised that a global awareness of ocean literacy is crucial for its preservation.
See coexploration.org/oceanliteracy for more information.

Overarching themes of the resource

Theme 1:
Te Moananui-a-Toi: the islands and history
Te Moananui-a-Toi: the Hauraki Gulf Marine Park consists of a group of islands that were first inhabited by Ngāti Rehua Ngātiwai ki Aotea, the area's mana whenua, who are the direct descendents of Toi Te Huatahi, the Polynesian voyager who reached Aotea around 1150AD. Students will become familiar with this landscape and its taonga species.

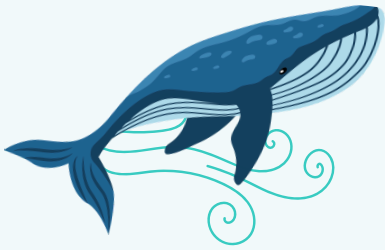
Theme 2:
Biodiversity and changes in abundance over time
Learn about the unique biodiversity inhabiting the park: from microscopic plankton to amazing megafauna such as whai rahi/oceanic manta rays, tohorā/ Bryde's whales, mango/ sharks and seabirds like tākoketai/ black petrel.

Theme 3:
Threats to Moananui -a- Toi
Explore the threats to this landscape and why the abundance of biodiversity has decreased. Learn about the increasing pressure on the park from: fishing, climate warming, marine heat waves, changing ocean currents, ocean acidification, impacts from noise, collision/ entanglement and pollution.

Theme 4:
The Story Of Marine Protection
Explore how the area has been protected over time and how students can help to protect and enhance biodiversity in Te Moananui-a-Toi.

Te Moana-nui-a-Toi and the islands

Lesson One



Explore the islands of Te Moana-nui-a-Toi and their global significance.

Learning areas	Social Science, Science, English.

Learning Objectives

- Recognise the islands and geography of Te Moana-nui-a-Toi
- Understand the importance and global significance of the area.

Materials Needed

- Student fact sheet 1: The islands of Te Moana-nui-a-Toi
- Student worksheet 1: The importance of Te Moana-nui-a-Toi.

Key concepts

- Te Moana-nui-a-Toi
- Maps
- Islands
- Marine protection.

Sparking curiousity

The ocean of Te Moana-nui-a-Toi

1. Explain to students that the ocean is one big, interconnected body of water that covers about 70% of planet Earth. Te Moana-nui-a-Toi and the outer islands of the Hauraki Gulf- are our local corner of the Southern Pacific Ocean.

2. Ask students to discuss what area we mean when we talk about 'Te Moananui-a-Toi.' Explain that this area covers the outer Hauraki Gulf and includes Aotea/Great Barrier Island and Te Hauturu ō Toi/ Little Barrier Island.

Familiarise students with the area through a mapping online tool or the Map of Te Moana-nui-a-Toi on page 7. Point out Auckland City and compare where the students' location is on the map. Emphasise that Te Moana-nui-a-Toi is close to many Aucklanders: it is right on our doorstep.

Main activity

The importance of Te Moana-nui-a-Toi

3. Explain that Te Moana-nui-a-Toi is an important area for endangered species that live and breed nowhere else on Earth, like our seabirds (such as tākoketai/ black petrels) and Bryde's whales. The area contains important marine and land conservation areas for northern Aotearoa/ New Zealand.

The islands of the outer Gulf

4. Give out copies of the Student fact sheet 1: The Islands of Te Moana-nui-a Toi on page 6-7 to groups of students. Ask students to read the fact sheet together.

5. After reading the fact sheet, ask students to complete Student worksheet 1: The importance of Te Moana-nui-a-Toi on page 8. Please ensure students complete this worksheet before visiting the museum education programme.

6. Ask students to share in groups what they have learned through completing the student worksheet. Then, as a class, ask them to share their experiences of Te Moana-nui-a-Toi.

7. Students can then summarise what Te Moana-nui-a-Toi means to them and its importance, through making a poster. Use an online tool such as Canva (canva.com) or Picsart: (picsart.com/design/posters/) to design the posters.

Extending learning

- Find out more about the wider Hauraki Gulf Marine Park at the DOC website.
- Learn more about habitats and why these are important at the Young Ocean Explorers website.

The Islands
of Te Moana-nui-a-Toi

The waters of Te Moana-nui-a-Toi are habitat for 20% of the world's whale and dolphin species.

Te Moana-nui-a-Toi, sometimes referred to as the outer Hauraki Gulf, was named in honour of the Polynesian navigator, Toi.

This breathtaking region, located in Auckland, is well known worldwide as a sanctuary for endangered seabirds, sharks and rays.

Aotea/ Great Barrier Island

Aotea/ Great Barrier Island is largest island in Te Moana-nui-a-Toi, and is home to over 1000 people. It is around 60% nature reserve and is home to many endangered birds such as tākoketai/ black petrel, pāteke/ brown teal and banded rail. Aotea was named for the waka of the same name, which arrived in Aotearoa in the 14th century.

Te Hauturu ō Toi
Little Barrier Island

Te Hauturu ō Toi was Aotearoa's first nature reserve. Because it is a protected area, you must have a permit to visit the island. Living here are many endangered species, such as: hihi/ stitchbirds, kōkako and wetapunga/ giant wētā. This island is covered in beautiful native forest.

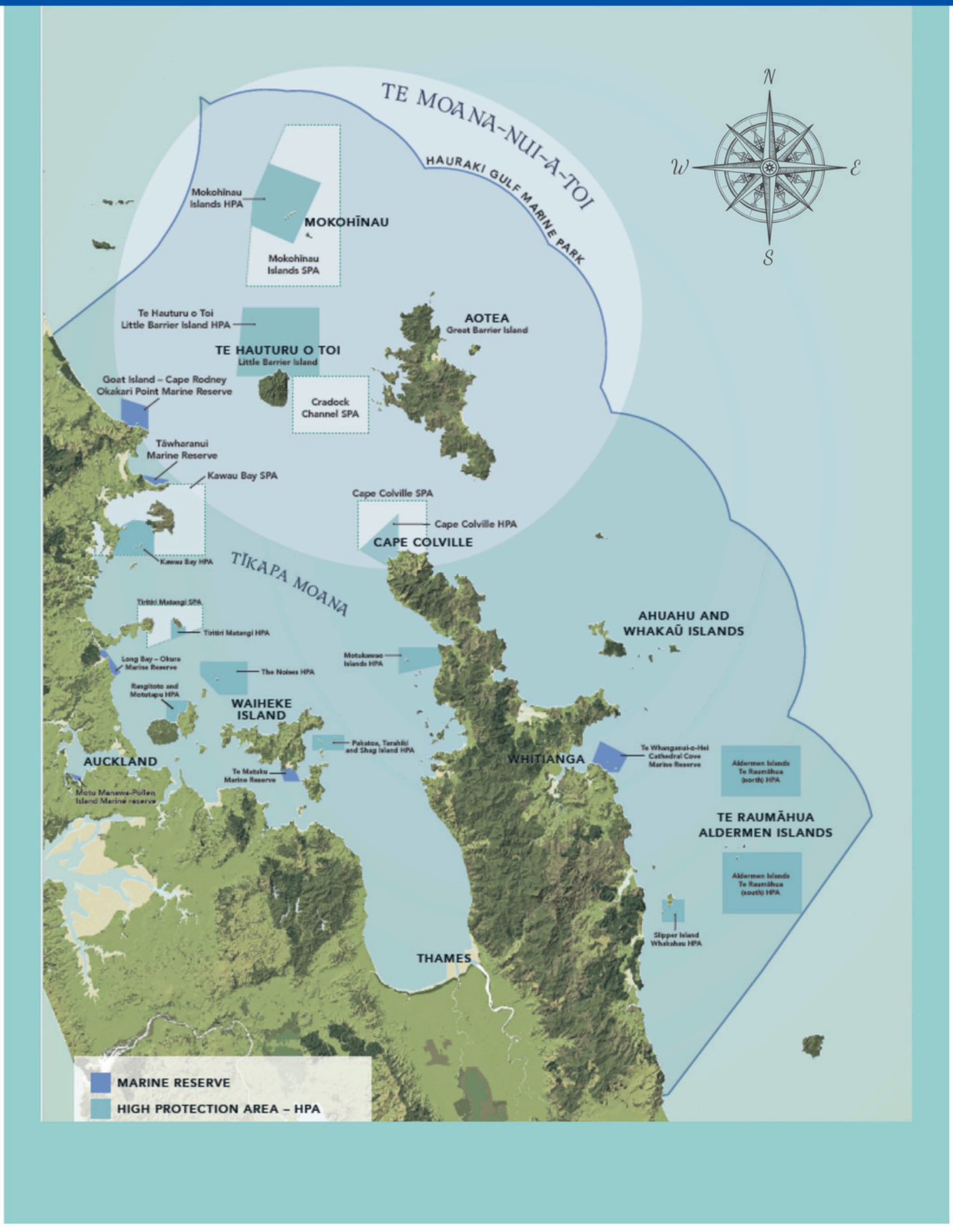
Mokohīnau Islands

These northern-most islands in Te Moana-nui-a-Toi are now a highly protected area. These pest-free islands are surrounded by reefs and are home to oi/grey-faced petrel, skinks and mutton birds. You need a DOC permit to land on most of these islands, except Pokohinu/Burgess Island.

Cape Colville, Coromandel

This area is part of the North Island (mainland) of Aotearoa. It is home to beautiful reefs, stunning reef fish and colourful sea sponges.

Map of Te Moana-nui-a-Toi



Images: Aotea/Great Barrier by Studio tides (CC BY 2.0); Hauturu/Little Barrier by DOC (CC BY 2.0), Mokohinau Islands by Mark Whatmough, Kōkako by Getty images (Canva pro).

NAME:

STUDENT WORKSHEET 1

The importance of Te Moana-nui-a-Toi

1. **Why is Te Moana-nui-a-Toi important?**

2. **Which islands are part of Te Moana-nui-a-Toi (the outer Gulf) ?**

3. **How do marine reserves and protection look after the living things in the outer Gulf?**

4. **Have you ever visited part of Te Moana-nui-a-Toi or the Hauraki Gulf, such as a beach, or marine reserve like Goat Island? Describe what it was like.**

Biodiversity in Te Moana-nui-a-Toi

Lesson Two

From tiny plankton to mighty whai rahi (oceanic manta rays) the taonga species in Te Moana-nui-a-Toi are connected in surprising ways.

Learning areas	Social Science, Science, English.

Learning Objectives

- Introduce students to the rich biodiversity within Te Moana-nui-a-Toi: from tiny plankton to megafauna
- Explore some of the unique ecosystem connections between species found in Te Moana-nui-a-Toi.

Materials Needed

- Student fact sheet 2: An Abundance of Biodiversity
- Food web poster
- Student worksheet 2: Species connections
- Video: Riley Hathway and the work-up (02:09)

Key concepts

- Biodiversity
- Work ups
- Food web
- Ecosystem connections

Sparking curiousity

The work-up: a feeding frenzy

1. Explain to students that biodiversity is the variety of living things that are living in an environment. In Te Moana-nui-a-Toi, that diversity is spectacular. Every species, no matter how tiny or mighty, contributes to the balance and wellbeing of the whole environment.
2. Within Te Moana-nui-a-Toi, the upwelling of currents, when warm and cold water meet, drive plankton to spark ocean life to form a feeding frenzy called a work-up. Zooplankton rise from the depths, small fish like mohimohi (sardines and pilchards) dart in, creating a scent that attracts bigger fish. Tākapu /gannets plunge from the sky, summoning other seabirds. Large fish like takeketonga/ marlin and mangō /sharks rocket through, while slower moving animals linger at the edges. As the frenzy fades, seabirds settle on the water waiting for the next feast.

Main activity

3. As a class, watch the video: Riley Hathway and the work-up (from 47 seconds) of Riley Hathaway (from Young Ocean Explorers) explaining how a feeding frenzy works. This provides a great glimpse into the biodiversity in Te Moana-nui-a-Toi. After viewing, share ideas about what a work-up is and why they are important for the entire food web.

The food web

4. View the poster: The work-up. If you want to download a PDF high quality copy, go to: maritimemuseum.co.nz/learn/education-resources

The poster shows the food web in Te Moana-nui-a-Toi.

Look at the poster in small groups and consider the following questions:

- How many different species do you think there are in this picture?
- Which species do you think are common and which ones are rare?
- What might happen if one species disappeared from the food web?
- If you were one of these animals, which one would you be and why?
- Identify one species you would like to learn more about.

5. Explore Student fact sheet 2: An Abundance of Biodiversity on pages 11-12. Use the factsheets and the supporting resources listed below to learn more about some of the taonga species in Te Moana-nui-a-Toi. Using the information on the fact sheets, students can then work together to complete Student worksheet 2: Ocean connections on page 13, which highlights the feeding relationships, migration connections, breathing connections and symbiosis between species in the ecosystem.

Extending learning

- Write a short narrative or comic strip from the perspective of one species found in Te Moana-nui-a-Toi.
- Prompt students to help them step into their chosen species' perspective:
  - What do you eat? Who eats you?
  - Where do you live in the ocean?
  - Are you endangered or not threatened?
  - How do you help keep the ecosystem healthy?

An Abundance of Biodiversity

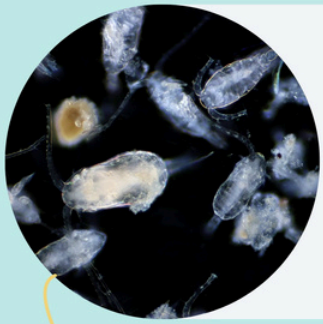
Te Moananui-a -Toi is an amazing area full of amazing biodiversity. Biodiversity is the variety of life. There are many connections between the different species in the area: such as **feeding**, **migration, breathing** and **mutualistic** (benefits both species) connections.

Whai rahi - oceanic manta rays

Oceanic manta rays are the largest rays in the world, growing up to 7 metres wide and weighing up to two tonnes. These intelligent and social creatures hold records for the longest migration, deepest dive and the coldest water visited by any manta.
With the biggest brain of any fish, they can even recognise themselves in a mirror. **They are filter feeders and use specialised gill plates to sieve zooplankton and small fish from the water.**
Each has unique belly spot patterns, like fingerprints, used for identification. Slow to reproduce, producing one pup every 2–5 years, their populations are declining worldwide and they are endangered.

Terehu - Bottlenose dolphins

Terehu are intelligent and playful. They live in groups, often close to shore, and feed on fish and squid. They can live for decades, but face threats increasingly from humans- with tourism and boat traffic disturbing or injuring them.
Bottlenose dolphins have a unique relationship with false killer whales: they have been seen hunting as well as travelling and migrating together.
They are sometimes prey for sharks/mangō and maki (orcas).



Meroiti- Plankton

Plankton are the most abundant life form in Te Moana-nui-a-Toi and are the foundation of the marine food web.
Phytoplankton float near the sunlit surface, making food through photosynthesis. In the process, they produce about half the oxygen we breathe and absorb carbon dioxide, helping balance Earth's climate.
Zooplankton (animal plankton) drift along with the current in the sea. They eat phytoplankton, and larger zooplankton like krill and jellyfish feed on them.

False killer whales

False killer whales are named for having similar skulls to the maki (orca/killer whale), though they look different- dark grey-black without white patches.
In summer they are often seem with terehu (bottlenose dolphins), hunting together, sharing food and forming long lasting connections.
Both species often bear scars from mangō (shark) and orca attacks.

Remora fish

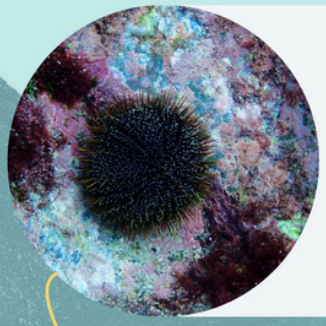
Also known as suckerfish. They have a disc on top of their head used to attach themselves onto marine animals like whai rahi (oceanic manta rays). **This provides them with: free transport, food, protection from getting eaten and increased reproductive chances (usually more than one remora on a manta ray, which means remoras have a high chance of finding a mate).**
This is a mutual relationship where the ray benefits from the remora eating bacteria and parasites.

Tākoketai/ Black petrel

Once found all over Te Moana-nui-a-Toi, tākoketai now nest only on Aotea (Great Barrier Island) and Hauturu (Little Barrier Island), on high peaks, away from predators such as stoats and feral cats.
In summer they follow mixed pods of terehu (bottlenose dolphins) and false killer whales, feeding on their scraps. More than any other seabird, tākoketai are at risk from being killed by longline and trawl fisheries.

Mako shark

Mako sharks are some of the fastest swimmers in the moana, reaching speeds of up to 74 kilometres per hour. Shark numbers in Te Moananui-a-Toi have declined by about 86%.
Sharks are top (apex) predators, eating mostly fish like tāmure/snapper. They help keep prey numbers balanced by eating the weak and sick. Scientists call them a 'keystone species' because they are vital for a healthy ocean.



Kina

Kina, also known as sea urchins or sea eggs, are unique to Aotearoa. **They are a popular food for tāmure (snapper) and koura (crayfish). When tāmure and koura are overfished, kina populations can grow rapidly.** As kina feed on kelp, an increase in their numbers leads to the depletion of kelp, which disrupts the entire food web and creates kina barrens. This poses a significant challenge in Te Moana-nui-a-Toi.

Tāmure - Snapper

Tāmure are opportunistic feeders, consuming a wide variety of foods including shellfish, crabs, shrimp, and kina. Similar to sharks, they are a keystone species, meaning that they have a crucial role in regulating populations like kina and preventing overgrazing of kelp forests.

However, snapper are highly sought after by fishers, which places significant pressure on their populations.

Food web poster

To download a high resolution version of the poster, please visit:
https://drive.google.com/file/d/1FXNt07d1UqXVvwaE9JCX8lz7mZNefCMf/view?usp=sharing

STUDENT WORKSHEET 2

OCEAN CONNECTIONS

An ecosystem is all of the plants, animals and other living and non-living things interacting with each other.
Living things in the moana are all connected to each other through feeding, migrating and mutualistic (benefits for both species) connections.
Write in the circles about the feeding connections, migration connections and helpful relationships that exist between the creatures in fact sheet 2.

Zooplankton

Feeding connection

Whai rahi/ Oceanic manta rays

Mutual connection

Remora fish

Phytoplankton

Breathing connections (with all species)

Terehu/ Bottlenose dolphins

Feeding and migration connections

False killer whales

Feeding connection

Tākoketai/Black petrel

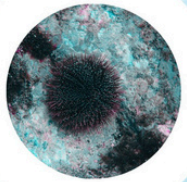
Mako shark

Feeding connection

Tāmure/ snapper

Feeding connection

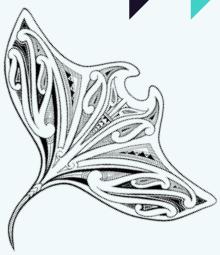
Kina



Mana whenua: Ngāti Rehua- Ngātiwai ki Aotea

Lesson Three

Learn more about Te Moana-nui-a-Toi from the perspective of Ngāti Rehua- Ngātiwai ki Aotea: the mana whenua of the area.



Learning areas	Social Science and Mātauranga Māori.

Learning Objectives

- Learn more about the mana whenua of Te Moana-nui-a-Toi
- Understand the history of the area
- Describe kaitiakitanga and traditional management strategies, such as rāhui.

Materials Needed

- Videos from the Ngāti Rehua website: ngati-rehua.squarespace.com
- Student worksheet 3: Mangō, Tākoketai, Whai and Tāmure

Key concepts

- Mana whenua
- Kaitiaki and kaitiakitanga
- Rāhui

Sparking curiousity

Mana whenua

1. Ngāti Rehua- Ngātiwai ki Aotea are the mana whenua, mana moana and mana tangata of Te Moana-nui-a-Toi. They are the direct descendants of Toi Te Huatahi: the Polynesian voyager who reached Aotea around 1150AD. The iwi continues to inhabitat Te Moana-nui-a-Toi and use a variety of traditional/ tikanga practices such as kaitiakitanga, whanaungatanga and manaakitanga.

2. View the video Mana Tupuna (04m:59s), which introduces the iwi and their tribal areas, such as Aotea/ Great Barrier Island.

After viewing, discuss:

- Who are the ancestors of Ngāti Rehua?
- How was Hauturu ō Toi/ Little Barrier named?
- Unpack how the area was first settled by Māori.

Main activity

3. View the video: Mana Moana: (05m: 44s), which tells the story of a journey across Te Moana-nui-a- Toi.

Visit the Ngāti Rehua- Ngātiwai ki Aotea website: ngati-rehua.squarespace.com

Discuss the connections of Ngāti Rehua with the moana/ sea.

- Who are the kaitiaki that are mentioned in the video?
- Draw a picture of some of the animals mentioned, such as tohorā/ whales
- Try the pop quiz at the end of the video about the bodies of water.

4. Kaitiaki aim to restore the mauri/ life force of forests, waters and seas. They are protectors of the taiao/ environment and have a life sustaining relationship with their lands. They use tools such as monitoring, restoration, protection and rāhui to maintain balance in the taiao/ environment. Read about how traditional management strategies such as rāhui are still used today at: pourahui.nz/ngati-rehua-ngatiwai-ki-aotea.

- Colour and connect with kaitiaki on Student worksheet 3: Mangō, Whai and tāmure.

6. Learn more about nature on Te Hauturu ō Toi/ Little Barrier through the video Mana Ngahere: (06m:17s).

- How are the kauri tree and the tohorā connected?
- How has the landscape changed over time? What living things have been impacted by humans?
- How is the taiao/environment being restored?

7. Reflect on students' identity and their connections to Te Moana-nui-a-Toi. Do any students have whanau connections to Ngāti Rehua or other iwi?

8. View the video: Ngāti Rehua (05m:35s) to learn more about the naming of the features of the landscape, their identity and their ancestors. Describe the three kaitiaki of the tribe.

Main activity continued...

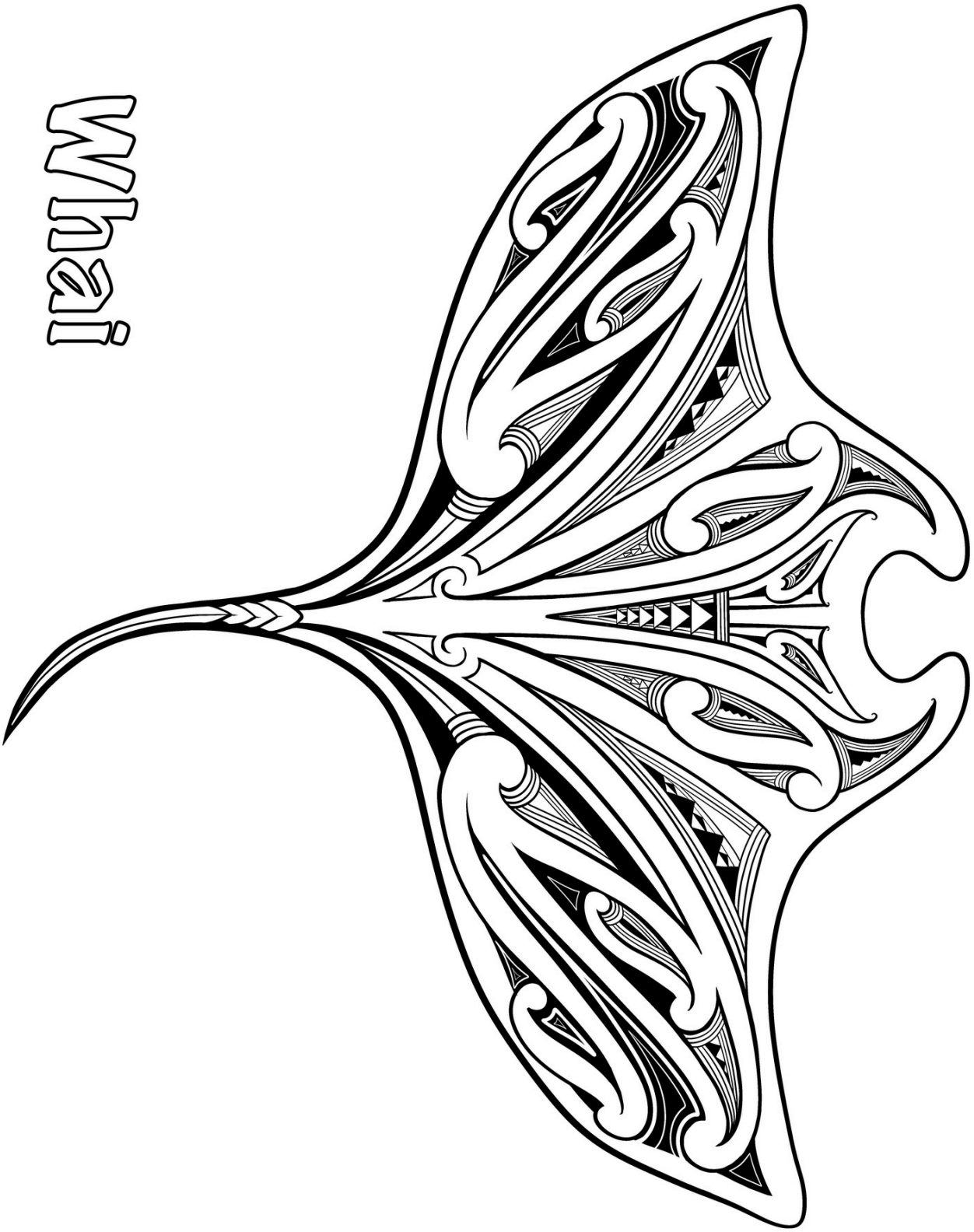
9. The video Ngāti Rehua ends with the whakatauki:
Toitū te marae a Tāwhiri,
Toitū te marae a Tāne,
Toitū te marae a Tangaroa
Toitū te iwi o Ngāti Rehua e.
Discuss who Tāwhiri, Tāne and Tangaroa are.
Where are their marae? Find out more about Ngā Atua and their relationship with the taiao/ natural world.

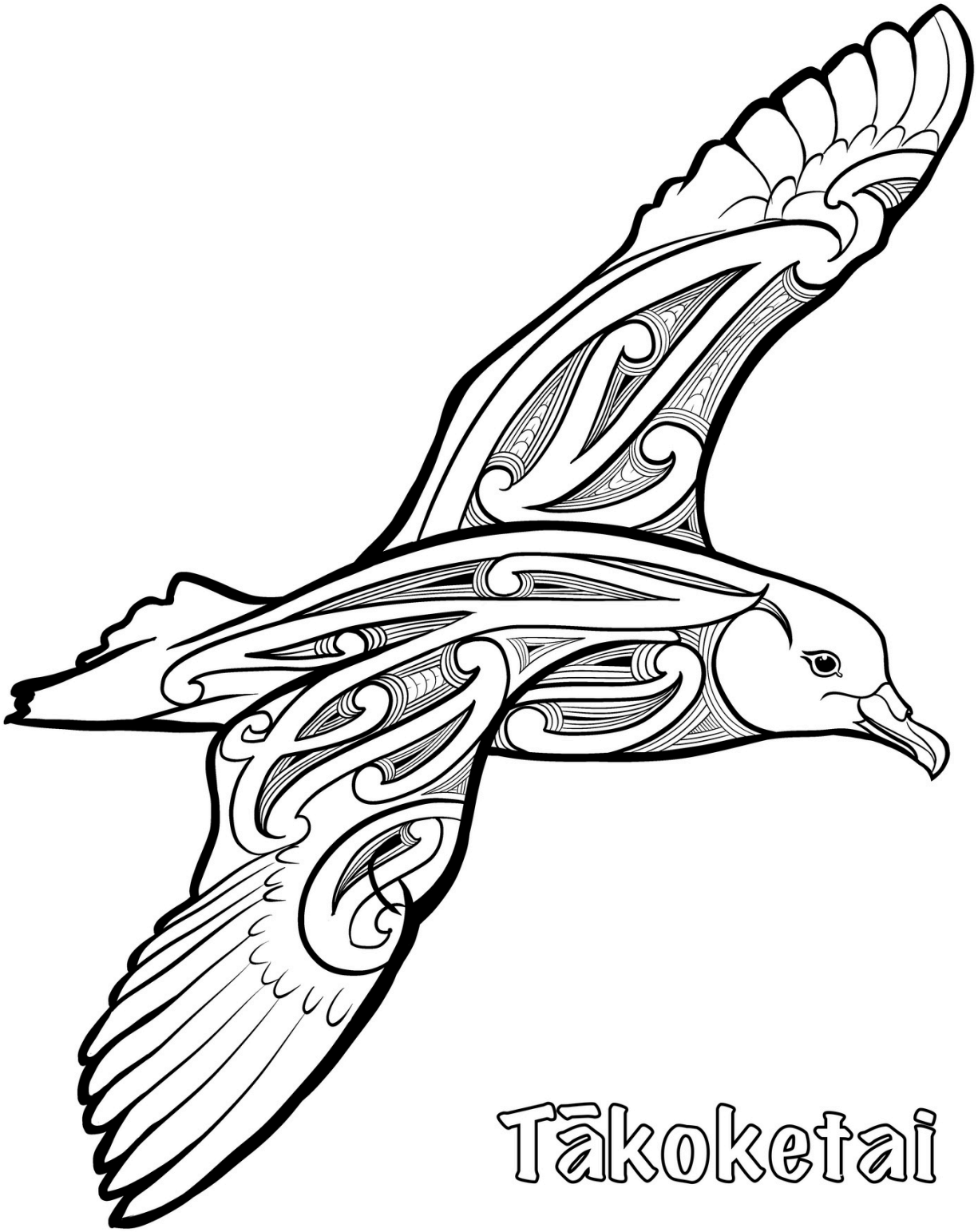
Extending learning

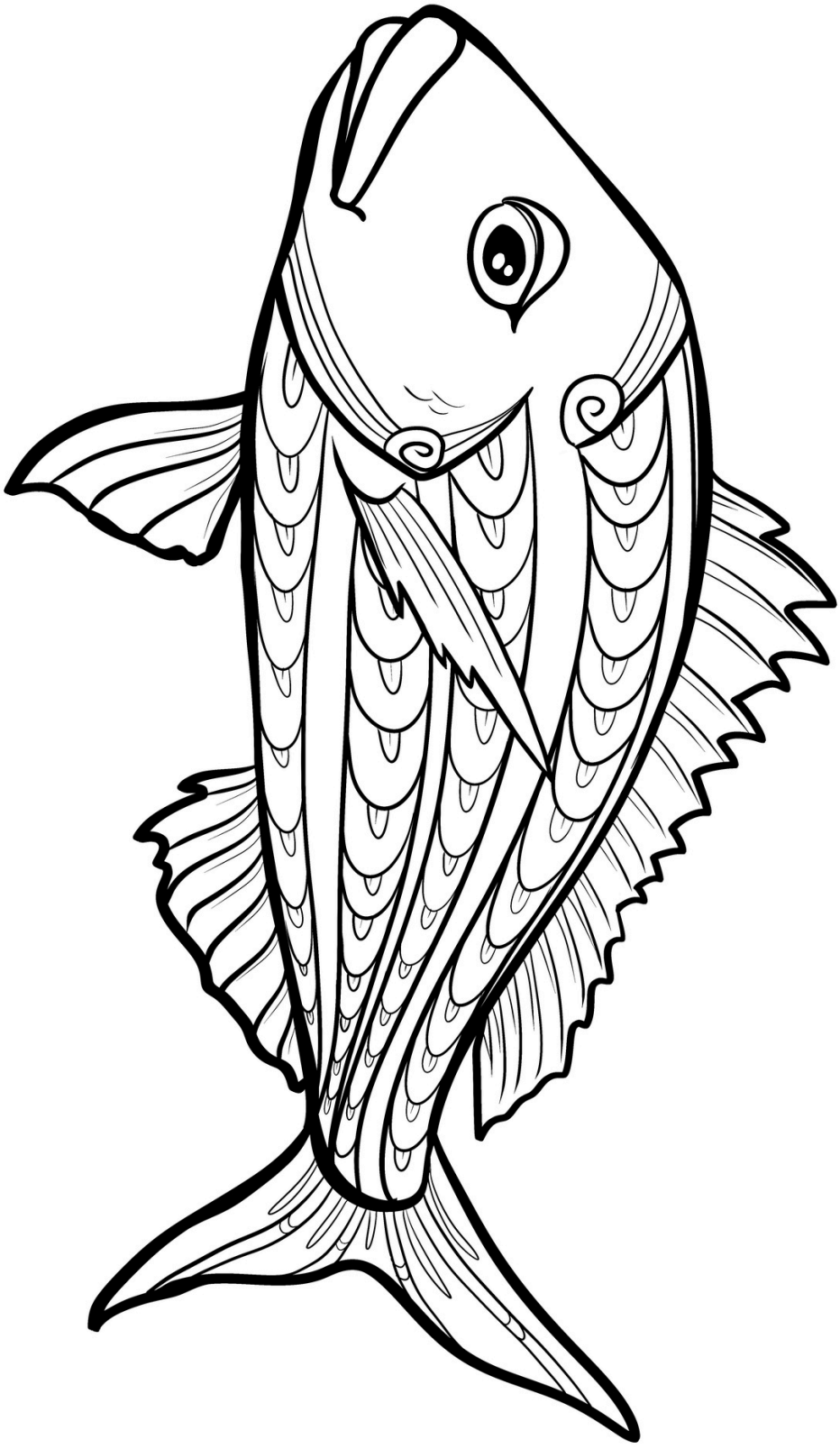
What is a rāhui?
Rāhui is a traditional Māori practice where an area or resource is temporarily restricted. It is used to protect the environment, show respect, and allow recovery. A rāhui might be placed after overuse, pollution, or events such as a fire or drowning. In Aotea (Great Barrier Island): A rāhui was placed to help contain the spread of an invasive seaweed species: Caulerpa.

- Can you find out if there are any places in your local area under rāhui? Why do you think rāhui are used?
- Do you think rāhui are a good idea for protecting the environment and people?

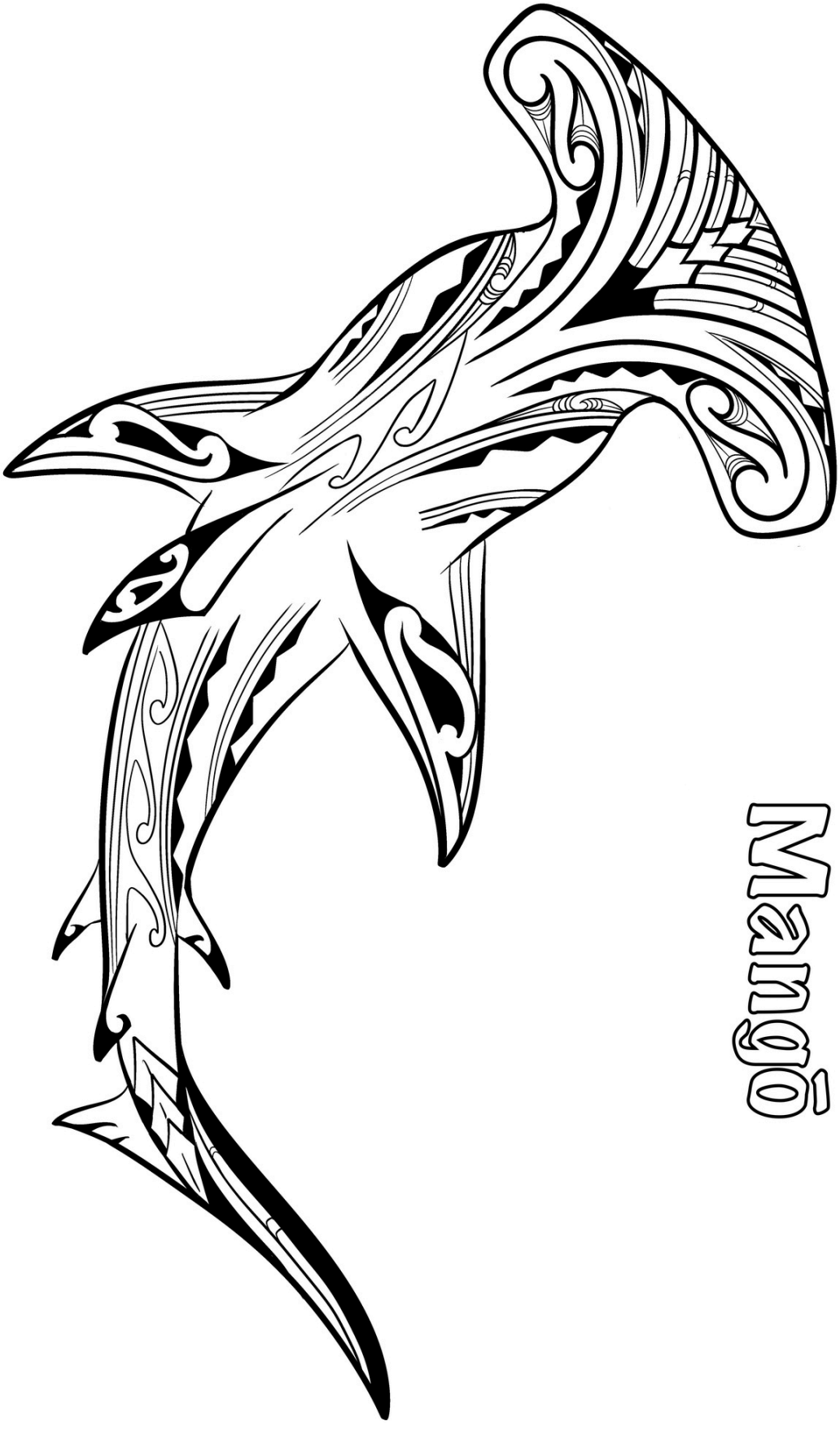
wheke




Tākoketai



Tamure


Mango

How we value the moana

Lesson Four

This activity aims to spark discussion and encourage critical thinking. Students will have a chance to share their feelings about the moana/ocean, listen to others and invite a shift their perspective.

Learning areas Social Science, English.

Learning Objectives

- Share experiences and feelings toward the moana
- Recognise different ways of valuing the moana
- Develop empathy and connection by considering the role of the moana in sustaining life.

Materials Needed

- Student worksheet 4: The moana and me.
- Ngā Huhua video (3m:47s)

Key concepts

- Values and perspectives
- Kaitiakitanga (guardianship)

Sparking curiousity

Connecting with the moana

1. Invite students to find a comfortable spot in your learning space. Encourage them to sit quietly, close their eyes if they wish, and prepare to listen.

2. Listen to the moana- Play the sound of the moana (waves, ocean ambience) for 1–2 minutes or watch the Ngā Huhua video (3m:47s). Ask students to focus on what the sounds make them feel, imagine, or remember. What kupu/words (feelings, images, things or memories) come to your mind as they listen? Give students a moment to think silently, then share aloud in groups.

3. Record the kupu/words that came to mind as they listened on the board. This will be useful as a word bank reference to help complete the student worksheet.

Main activity

Exploring values

4. Create a continuum in the classroom, labelling three different areas: Agree / Neutral / Disagree.

Read out or display one of these statements at a time:

- *'The moana cares for me.'*
- *'The moana is a scary place.'*
- *'It is our responsibility to pass on the moana in the same condition to our mokopuna/ future generations .'*
- *'Marine reserves are important to protect abundance.'*

Students can consider each statement and move to a part of the learning space that represents their stance: agree / neutral / disagree for each question.

5. After the continuum activity, ask students to have a quick chat about their positions and reflect on how they were similar or different from the rest of the group. Facilitate a whole class kōrero where students discuss their thinking.

Prompt with guiding questions, such as:

- What makes the moana feel scary or safe?
- How does the moana care for us (kai, oxygen, recreation, identity)?
- What does kaitiakitanga mean in practice for us today?
- What might happen if we don't look after the moana for our mokopuna?

Thoughts and feelings

6. Watch the video vimeo.com/fanaticals/review/Fletcher (02m:32s) of Fletcher Beazley of Ngāti Rehua explaining his experiences in the moana, the Māori principle of rāhui and why the moana needs our help. Revisit the values continuum questions: did the discussion or video change your position or strengthen your feelings? Why/ why not?

7. Discuss the statements on Student worksheet 4: The moana and me, see page 23. Students can then record their thoughts, feelings and learnings by completing page 2 'The moana and me,' see page 24.

Extending learning

Putting values into action

- What are students' thoughts about the future of fishing and fishing rules? Should we be able to fish or gather shellfish without limits? Would students respect and uphold a rāhui in their neighbourhood or holiday spot? Why/ why not?

- Discuss: Is the moana just a resource to use and take from, or a living taonga (treasure) that sustains us and needs our guardianship?

- Discuss our rights and responsibilities as citizens. What is more important: people's rights to fish or the future of fish stocks?

People have different values and perspectives about ocean conservation. Why is it vital that we find common ground with the values of different groups of people? It is essential that we work together to protect our moana and planet for the future.

STUDENT WORKSHEET 4

THE MOANA AND ME

Discuss the following statements about the moana/ ocean and decide if you agree or disagree with them.

The moana is a place for our family to have fun and be together.

The moana helps me relax. I love swimming in the sea.

We have a responsibility to care for the moana: we take only what we will eat.

We have a right to fish where we want to and take as many fish as we feel like taking.

I don't really visit the sea. It is not important to me.

The moana connects people and cultures across the world. It is vital to our survival.

The ocean can be a scary and unpredictable place.

Your ideas:

STUDENT WORKSHEET 4

NAME:

THE MOANA AND ME

Experiences with the moana/ sea

What is one memory or story I have about the moana?

Connections with the sea

How am I connected to the moana? (e.g., kai, recreation, whakapapa, identity)

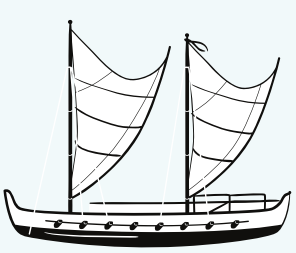
Feelings about the sea

How does the moana make me feel? (safe, scared, peaceful, inspired...)

Why do I value the moana?

Word bank: special, connected, life, spiritual, beautiful, fresh, wonder, fun, mysterious, dangerous, powerful, sustain.

Changes over time



Lesson Five

Explore how Te Moana-nui-a-Toi has changed over time, from before the arrival of people to the present day. Investigate a timeline explaining the significant events of the past.

Learning areas Social Science, English

Learning Objectives

- Recognise that there have been changes to the biodiversity and health of Te Moana-nui-a-Toi over time.
- Identify key past events that have had an impact on the moana in Tāmaki Makaurau/Auckland.

Materials Needed

- Student worksheet 5: Order the Timeline of Te Moana-nui-a-Toi.
- Gulf Journal Changes in the Gulf poster: Changes-in-the-gulf

Key concepts

- Time and change
- Migration of people
- How people affect the taiao/environment.

Sparking curiousity

imagining the past, reflecting on the present

1. Ask students to imagine what Te Moana-nui-a-Toi was like hundreds of years ago. How would it have looked and sounded? Introduce the idea of changes to the environment over time. Explain that hundreds of years ago the moana was more abundant and there would have been a lot more visible life and more bird song noticeable, almost everywhere in Aotearoa. Now, seals have disappeared from Te Moana-nui-a-Toi and the numbers of tāmure/ snapper, whales and dolphins have plummeted to less than 20% of what was originally present.

- Why do students think this has changed?
- Discuss how people can affect the environment.

Main activity

The decline over time

2. Introduce the idea of the decline of abundance over time. View the poster from Hauraki Gulf Forum: https://gulfjournal.org.nz/poster/changes-in-the-gulf/

Explain that the moana/oceans are facing significant challenges, including climate change, overfishing, sedimentation, and pollution, which threaten their health and essential life-supporting services.

- Identify the most significant negative impacts on the abundance that occurred over this time.

Looking to the future

3. Watch the video of Ratanui Beazley, where he talks about his connection to the moana, the impact of Caulerpa on his area, and his vision for the future: https://vimeo.com/fanaticals/review/1123404174/743a359494 (2m 32s).

Then view the NZMM video with Rochelle Constantine: https://vimeo.com/fanaticals/review/1123405089/31889d92d6 (2m55s) to learn about how biodiversity have been relating to each other over time and the danger of all the effects of things like plastic and noise that can impact the ecosystem.

- Discuss the changes that the two people in the videos have mentioned have been happening over time.

4. View the Te Moana-nui-a-Toi- Events on the timeline on page 1 of student worksheet 5. in groups or pairs of students. Explain that the events are in the wrong order and the timeline is mixed up.

- Go over key vocabulary, such as: marine reserve, biodiversity, predators and invasive species.

5. Students can then arrange the titles from earliest to most recent (listed in order):

- Extraordinary abundance
- Arrival of first explorers
- First Europeans arrive
- Fishing, whaling and sealing
- First marine reserves
- Further impacts
- Increased marine protection.

Complete page 2 of the Student worksheet 5: Order the Timeline of Te Moana-nui-a-Toi.

Extending learning

Community and changes over time

Te Moana-nui-a-Toi tells a story of change and understanding the past helps us make better choices for the future.

Prompt discussion with questions:
"What changed over time in Te Moana-nui-a-Toi?"
"Who caused this change?"
"Was this change positive or negative?"

6. Students can ask their parents and grandparents what changes they have seen in their lifetime on the coast or in the moana.

Write some interview questions and record the responses. Share and discuss how the moana has changed within the last few decades.
Use the information from interviews with their relatives to write a recount about the changes in species (such as shellfish, fish, koura/lobsters) and how this relates to the issues facing the moana.

STUDENT WORKSHEET 5

Te Moana-nui -a-Toi

Events on the timeline

These events are in the wrong order on the timeline! Help the tohorā find the correct order of events and write about the tell the story of Te Moana-nui-a-Toi on page 2.

First marine reserves

The first marine reserve in the world was created at Goat Island, Leigh near Auckland. Islands like Hauturu o Toi were already protected areas.

Arrival of first explorers

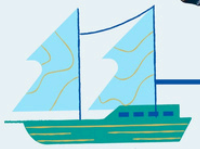
The arrival of ancestors such as Toi and Kupe. Te Moana-nui-a-Toi is named after Toi: an abundant place, full of life. Māori migration follows with several waka.

Further impacts

Fishing (both recreational and commercial), farming and pollution impacts take their toll on Te Moana-nui-a-Toi. Invasive species such as meditteranean fanworm and caulerpa seaweed arrive.

First Europeans arrive

Explorers from Holland and Great Britain also find Aotearoa. Early settlers arrive and quickly start taking advantage of the abudance of Te Moana-nui-a-Toi.



Fishing, whaling and sealing

Settlers set up fishing settlements, using some harmful methods like dredging. Whale and seal populations plumetted due to sealing and whaling. Commercial fishing started in the 1950s. Whaling was carried out until the 1960s.

Increased marine protection

The Hauraki Gulf/Tīkapa Moana Marine Protection Act introduces more marine protection in Te Moana-nui-a-Toi after concerns about declines in biodiversity.

Extraordinary Abundance

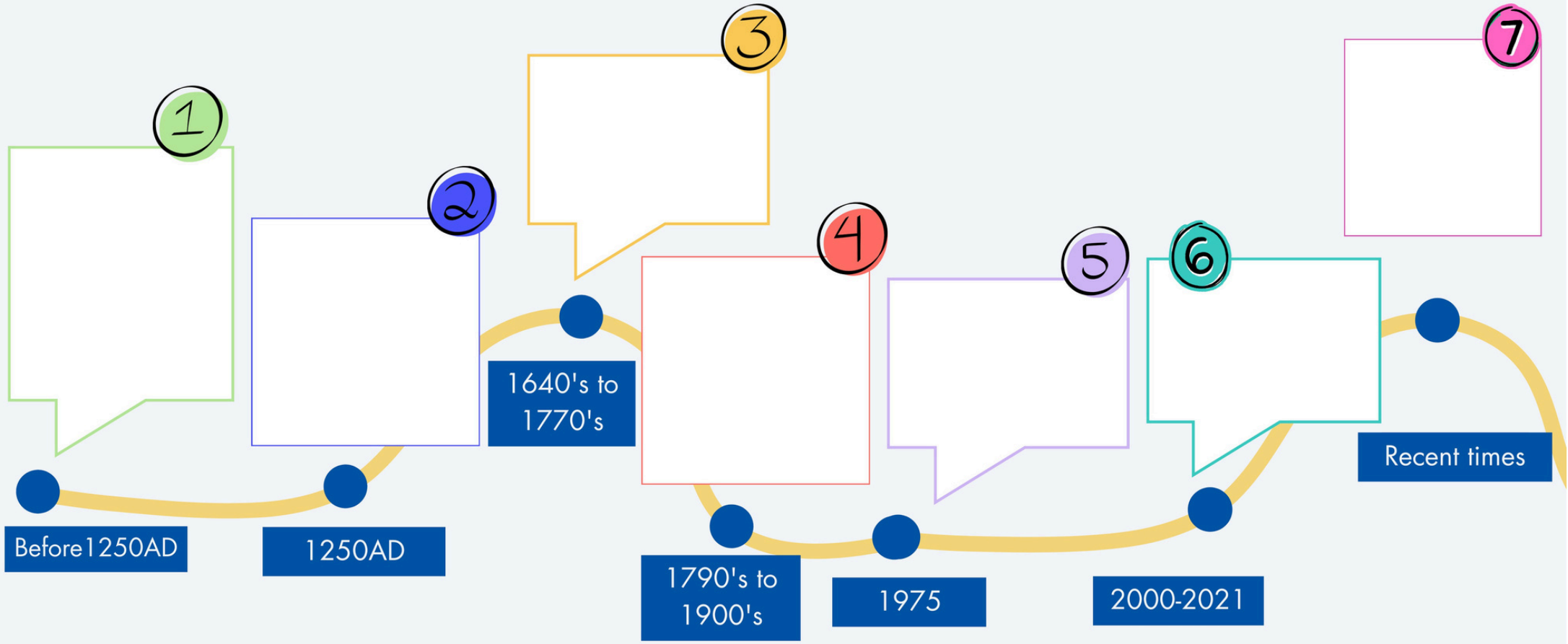
Marine ecosystems were thriving before people arrived in Te Moana-nui-a-Toi. There were countless fish, whales and seals present and millions of seabirds.

STUDENT WORKSHEET 5

Ordering the Timeline

Te Moana-nui-a-Toi

Write the titles from page one in the correct order on the timeline below.



Threats to Ngā Huhua

Lesson Six

This activity introduces students to the major threats to the abundance (ngā huhua) of Te Moana-nui-a-Toi. By understanding these challenges, we learn how to better care for the moana and protect the abundance of life within it.

Learning areas Science, English.

Learning Objectives

- Investigate the main threats to Te Moana-nui-a-Toi
- Identify how they impact the abundance (ngā huhua) of marine life.

Materials Needed

- Student fact sheets 3: Threats to biodiversity

Key concepts

- Threats/ issues
- Climate change
- Ocean acidification
- Overfishing
- Invasive species
- Pollution

Sparking curiousity

Threats and human activities

1. Te Moana-nui-a-Toi is a vibrant moana/sea teeming with life, home to fish, whales, dolphins, seabirds, and many other taonga species. Sadly, human activities on land and at sea are threatening its delicate balance, making survival harder for marine life.

- Begin with a whole class brainstorm posing this question: if the word 'threat' were a character in a story, what would it look like or do?
- Using ideas from the brainstorm, come up with a class definition of a threat or issue.

Think-Pair-Share

Imagine Te Moana-nui-a-Toi is like a giant, beautiful treasure chest. What kinds of things (threats or issues) could put that treasure at risk?
Students first jot down their ideas individually, then pair up to compare ideas, and finally share with the class.

Main activity

Investigating threats

2. The Threats to biodiversity factsheets introduce five key threats that affect the abundance (ngā huhua) of life in Te Moana-nui-a-Toi. Ask students to form groups to investigate each threat.

- Form five groups. Each group will become the 'experts' on one threat
- Read through the information provided about your threat
- Work together to answer the comprehension questions
- Each group can then report back to the class to share their findings about the threats and their impacts
- Ask students to create an artwork or poster about their threat.

Discussion/debate as a class

- After sharing information about the threats, students can then examine how these threats interact.
- Students can choose to debate or discuss an issue. Use the discussion questions below as inspiration to undertake a role play or mini-debate about the topic, involving all groups.

Example discussion questions

· How does each threat overlap with and interact with other threats?
· How are animals higher up the food chain (top predators) affected by these threats?
· How can we better balance the needs of people with the needs of biodiversity and the environment?
· How do our choices on land affect the health of Te Moana-nui-a-Toi?

Example debate questions

· We should have more limits for fishing and stricter rules.
· Plastic pollution is the biggest threat to the moana.
· Land next to waterways should not be developed.

Extending learning

Experimenting with acidification

- Try out these hands-on experiments to better understand ocean acidification:

Ocean Acidification impact on shells
Increase in CO2 Causes Acidic Oceans

- To learn more about ocean acidification, check out this resource developed by The New Zealand Marine Studies Centre:

The Ocean of tomorrow- Ocean Acidification and the Marine World

References from fact sheets

The State of our Gulf 2023 report: gulfjournal.org.nz/wp-content/uploads/2023/08/SOER-sum-online.pdf
Plastics and our precious fauna | Hauraki Gulf Forum Plastics and our precious fauna
Auckland Council videos about Caulerpa: youtu.be/Thmy0bT_GP0?si=m2c28MPo0amlz2uK
youtu.be/VJUg58fHXls?si=qtrEkffPGbuUE7Kk

Threats to biodiversity

Climate change- a warming and changing moana

Greenhouse gases and climate change

Burning fossil fuels has added more carbon dioxide (CO_2) to the atmosphere, which has contributed to global warming. The ocean absorbs much of this carbon, which warms the seawater and raises sea levels.

Warmer waters threaten marine life:

- The long-spined sea urchin moves south to cooler waters to find food
- Native rimu or rimurapa (bull kelp) is not able to live in the warming water.

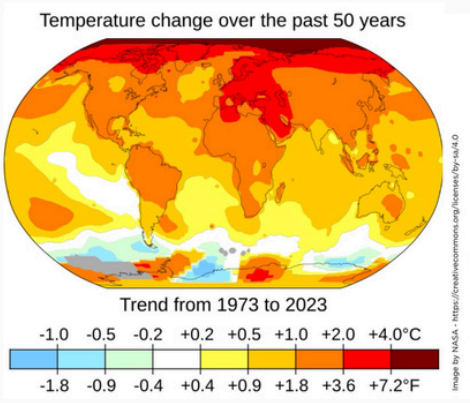
Ocean acidification

When extra CO_2 mixes into the ocean, it makes the water more acidic. This process is called ocean acidification.

Acidic water threatens marine life. It makes it harder for species like shellfish, krill, and plankton to build their shells. These are key food sources for fish, whales, dolphins, and seabirds. These changes disrupt the balance of the entire marine food web.

Climate change and weather events

Climate change also brings more frequent extreme weather events, such as storms, increasing sediment runoff and reducing water clarity, making life harder for vulnerable species.



Climate change: Comprehension Questions

- How is the moana/ocean involved in climate change?
- How much did the temperature of the ocean change in Aotearoa between 1973 & 2023?
- What is ocean acidification?

New Zealand Maritime Museum HUI TE ANANUI A TANGAROA
Part of the Auckland Council whānau

Overfishing- taking too much from the moana

Fishing is a big part of life in Aotearoa, but taking too many fish can upset the balance of the moana/ocean.

- Bottom trawling and dredging scrape the seafloor, destroying special habitats like sponge gardens and shellfish beds.
- Huge fishing nets (2 km long and 200 m deep) scoop up schools of fish, which are then sold overseas as pet food and cheap bait.
- Unsustainable fishing of kokowhawha (anchovy), mohimohi (sardines and pilchards), hautere (jack mackerel) and tawatawa (blue mackerel) has meant seabirds have less food to eat.
- Koura (crayfish) have almost disappeared from Te Moana-nui-a-Toi
- With fewer big fish around, smaller animals like kina have multiplied. Too many kina eat away at seaweed, stopping healthy kelp forests from growing. These damaged areas are called kina barrens.

All of these changes make the moana less healthy and throw the whole ecosystem out of balance.

Overfishing: Comprehension Questions

- What is overfishing, and why is it a problem for the moana?
- Name two fishing practices mentioned that destroy marine habitats.
- What are kina barrens, and why are they a problem?

Land use- what happens on land affects the moana

The choices we make on land affect the health of Te Moana-nui-a-Toi. When it rains, things like sediment, sewage, rubbish and chemicals wash into rivers and flow out to the moana. This runoff can make the water muddy, dirty and polluted.
Sediment can also cover shellfish beds, harming species like kūtai (green-lipped mussels) and scallops. These shellfish are really important because they help filter the water and support other marine life.

Dirty water also makes it unsafe for us to swim and enjoy the beautiful beaches around Te Moana-nui-a-Toi.

Comprehension questions

· What types of pollutants can wash into the moana when it rains?
· Which shellfish species are harmed by sediment, and why are they important?
· How does dirty water impact people who want to enjoy beaches?

Invasive species: Caulerpa

Caulerpa is an invasive seaweed first discovered on Aotea (Great Barrier Island) in 2021. Human activity causes it to spread; boat anchors and fishing gear break it into tiny pieces that drift across the seafloor. Caulerpa grows fast and forms a thick carpet that pushes out native seaweed. This blocks bottom-dwelling animals like crabs and clams from finding food. Over time, it creates a "monoculture," meaning only Caulerpa survives while other species disappear.

Because it spreads quickly and is very hard to remove, Caulerpa is a serious long-term threat to the habitats that many fish in Te Moana-nui-a-Toi rely on.

Comprehension Questions

- What is Caulerpa?
- Where was it first found in Aotearoa?
- What effect does Caulerpa have on native seaweed and bottom-dwelling species?

Plastics and microplastics

Plastic from the land often finds its way into the moana. Tiny pieces, called microplastics, float in the water and can easily be mistaken for food.

- Zooplankton ingest the most microplastics.
- Seabirds and fish such as tāmure (snapper) have often been found with plastic inside them.
- Whales in Te Moana-nui-a-Toi can ingest up to three million microplastics a day when they eat zooplankton and fish.

Eating plastic, or getting tangled in it, can make animals very sick or even kill them. When this happens, the whole food web is disrupted, and the health of the moana suffers.

Comprehension questions

- Where does most plastic in the moana come from?
- What are microplastics, and why are they dangerous?
- Which species in Te Moana-nui-a-Toi are threatened by plastics?

Technology for a bright future

Lesson Seven

Explore the advances in technology that are helping to clean up water and the moana. Encourage students to think creatively to design possible solutions to issues.

Learning areas	Science and Technology

Learning Objectives

- Explain how technology is having a positive effect on water quality and pollution issues
- Design a device to address the issue of pollution or plastics.

Materials Needed

- Materials for designs (will vary)
- Poster: The Gulf Recovers: gulfjournal.org.nz/poster/the-gulf-recovers
- Student worksheet 6: Technology for the moana

Key concepts

- Design and Technology
- Prototypes
- Pollution
- Plastics

Sparking curiousity

The impacts of pollution

1. Discuss the impacts of pollution and plastics on wildlife in the moana, for example seabirds are eating lots of plastics that they mistake for food. View the Hauraki Gulf Forum poster: Pollution Te Reo version of pollution poster
Share ideas about how people are working towards a positive future for Te Moana-nui-a-Toi and how technology might play a role in reducing pollution.

2. Other issues face Te Moana-nui-a-Toi, such as climate change, overfishing and invasive species. Find out more about these issues and how we can solve them with the Hauraki Gulf Forum poster series: gulfjournal.org.nz

Discuss: How can we solve these problems and ensure a bright future for the Gulf? What technology could help this future to come to pass?

Main activity

Investigating current technologies

3. Aotearoa will need new technology to address the challenges facing Te Moana-nui-a-Toi now and in the future. It will take a variety of different approaches to save the moana and our biodiversity.

Recently there have been some significant advances in how we clean water and care for the sea. Below are some examples of recent technologies helping to prevent pollution and plastics in the moana. Students could research other examples.

The Ocean Cleanup

Dutch inventor Boyan Slat created 'The Ocean Cleanup' as a high school student. This solar-powered system collects and recycles waste using a 600m long U-shaped floater and a 3-metre-deep skirt. Wind and currents propel the system, gathering plastics inside, while solar energy powers a plastic-catching device. See: youtube/Pv1Otdg4fok?si=W-rDLGtRZAR0a52l (02m:54s) for more information.

The LittaTrap™

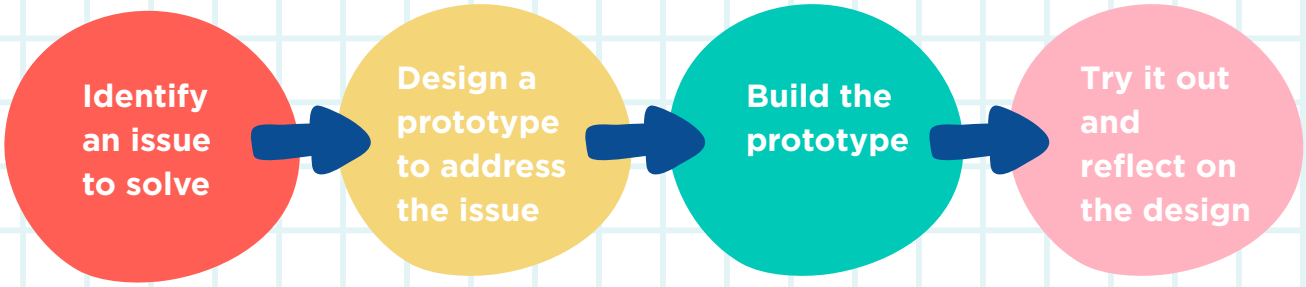
These stormwater drain inserts trap rubbish before it enters streams and the moana. They are designed to let water easily pass through, while trapping litter. See: stormwater360.co.nz/products/littatrap/ for more information.

Designing solutions for a cleaner moana

4. Create/make a prototype for solving our moana issues.

In groups or pairs students can make a design for tackling plastics or pollution in the moana. Encourage creative thinking and innovation.

- Students can identify an issue that they would like to help to solve. Their design will be simple but every technological idea starts somewhere! Record ideas for designs on Student worksheet 6: Technology for the moana.
- View these examples of primary students designing filtration devices for microplastics in the moana: nzaee.org.nz/tackling-microplastics



Main activity contd...

Review and test your prototype:

5. Try the prototype out, to see how it works.

Report on what worked well and what needed to change, for example:
"We made changes to my design once I thought about it having to make it waterproof"
"We made improvements on my design after testing, like adding floatation devices"
"Our device was powered by the force of wind on the water. We could think more about how to leverage that."

Extending learning

Futures thinking

- Take futures thinking further with 'Future problem solving' a competitive programme for students at: Future Problem Solving (FPSNZ)
- See an example of how the community has collaborated to develop a marine spatial plan for the Hauraki Gulf, see: seachange.org.nz. Mana whenua, central and local government, local communities and interest groups have all contributed to this plan. There are lots of initiatives that have been done to help improve the health of the Gulf, where the community is working together to solve significant issues.

NAME:

STUDENT WORKSHEET 6

TECHNOLOGY FOR THE MOANA

Design ideas

Draw what your technology might look like and describe the technology idea.

How it will work

Issue it addresses

What issue will your technology try to solve?

Materials needed

Help protect Te Moana-nui-a-Toi

Lesson Eight

From the global stage to our own communities and whanau, everyone has a role in protecting the ocean. Across Aotearoa, organisations are working hard to care for our moana: discover their mahi and explore how you can get involved.

Learning areas Science and Technology

Learning Objectives

- Recognise that people protect the moana at different levels, from global actions to individual actions
- Determine ways we can collectively and individually help protect Te Moana-nui-a-Toi.

Materials Needed

- Student fact sheet 4: 'Caring for the moana in Aotearoa'
- Student worksheet 7. Ocean action bingo.

Key concepts

- Environmental action
- Kaitiakitanga (protection and guardianship)
- Kotahitanga.

Sparking curiousity

The moana needs our help

1. Discuss why the moana needs our help. Who is responsible for protecting the moana? Set up four zones around your learning space: Global actions, National actions (Aotearoa), Local Community actions and individual actions.

Ask students to brainstorm all the actions and organisations they can think of that work at these different levels to save the moana. Record these ideas at the four zones through a bus stop activity, where students visit each corner of room, where there is a piece of paper with information about one level of actions. Students can visit each zone to brainstorm different types of actions.

2. Research and discuss some local organisations who are making a difference to the moana, the actions they are taking and which threats or issues they are trying to solve.

Main activity

The four levels of action

3. Explain that is important to act at different levels for collective action: as individuals, as well as communities, countries and globally. Actions we take as a society and in groups are an important part of creating positive change. Collective action starts with the government, and our policies and laws for protection and care of the moana.

4. Discuss how the local community could also help to protect the moana (they could support a rāhui, prepare for what do to if there is a stranding or monitor vulnerable shorebirds). We can act as a community or group, by participating in a citizen science project, undertaking a beach clean-up or picking up litter as a group or class.

5. Read Student fact sheet 4: 'Caring for the moana in Aotearoa'. Discuss the different levels of action described and how these organisations make a difference.

6. Conduct some research to find out more about local marine heroes who have made a difference to marine conservation. For example, Bill Ballantine is known as the 'father of marine conservation' in Aotearoa. He was a scientist who worked for decades to protect the moana, and his efforts led to New Zealand's very first marine reserve at Goat Island. Thanks to his vision and persistence, more than 40 marine reserves now exist across the country, giving marine life safe places to thrive. blog.doc.govt.nz/remembering-bill-ballantine

7. Marine reserves can help protect ecosystems, conserve biodiversity, and restore environments, but no-take reserves alone are insufficient to protect biodiversity. A variety of conservation measures will be necessary to maintain the health of marine ecosystems in the future. How can all the actions you are aware of add up to make a significant difference for the moana? Record and share the great work you are doing to help inspire others to do the same.

8. Using the Moana action bingo worksheet, identify what you can do individually or as a whānau to care for/protect Te Moana- nui-a-Toi. Complete as many actions as you can to help the moana. Ask students to come up with actions of their own.

Share with us

Share the actions that you will take with Hui te Ananui a Tangaroa: NZ Maritime Museum. All actions make a difference, no matter how small! Send your photos and description to email: education@maritimemuseum.co.nz.

Citizen Science and Inspiring Initiatives

Citizen science projects let everyday people help collect real scientific data, which gives researchers far more information than they could gather alone. They also help communities learn about local environments and feel empowered to take action to protect them. Participate in one of the following citizen science projects to learn more about action for the moana:

- Manta Watch New Zealand- mantawatchnz.org
- Marine Metre Squared- mm2.net.nz
- Sea Spotter- seaspotter.nz
- Spyfish Aotearoa- zooniverse.org/projects/spyfish-aotearoa

Learn more about some of our inspiring Aotearoa New Zealand organisations:

Mountains to Sea Conservation Trust and Experiencing Marine Reserves (EMR)
Experiencing Marine Reserves (EMR) is a programme that empowers people to dive into marine reserves, discover their wonders, and become kaitiaki (guardians) of the ocean. mountainstosea.org.nz/national-programmes/emr

Young Ocean Explorers
Young Ocean Explorers helps children across Aotearoa learn about and connect with the moana through exciting videos, quizzes and challenges. They help children across Aotearoa learn about and take action for the moana in fun, inspiring ways. youngoceanexplorers.com/

Tai Tū Moana
Ngāti Rehua-Ngātiwai ki Aotea is working with the Aotea Great Barrier Local Board and local environmental groups to manage the spread of Caulerpa, see: ngatirehua.iwi.nz/tai-tu-moana

Live Ocean
Blair Tuke and Peter Burling started Live Ocean – an organisation that uses sport to shine a spotlight on marine issues and raise money to protect our moana. See liveocean.org

Caring for the Moana in Aotearoa

Protecting the moana

Protecting the moana is vital for life in Aotearoa, as it provides food, supports wildlife, and maintains our climate. However, challenges like pollution, overfishing, and habitat damage threaten the ocean and the biodiversity within it.

We need all types of action, from small individual actions, to large global actions, to help turn the tide to save our moana.

Global actions

International groups such as the International Maritime Organisation (IMO) create worldwide rules to reduce pollution from ships and keep our oceans cleaner and safer. Global charities like WWF (World Wildlife Fund) and Greenpeace support sustainable fishing and help to restore marine habitats.

National actions

At a national level, the government helps protect the moana by creating laws and rules. One important example is the Hauraki Gulf Marine Protection Act, introduced in 2025. This law increased protected areas in Te Moana-nui-a-Toi (the outer Hauraki Gulf), limiting fishing and increasing the protected marine areas.
Another national action was the ban on single-use plastic shopping bags in 2019, which helped reduce plastic pollution entering the ocean.

Non-governmental organisations also play a big role at a national level. Groups such as Sustainable Coastlines and Sea Cleaners work all around Aotearoa to reduce ocean pollution and bring awareness to biodiversity issues. They organise beach clean-ups, collect rubbish from waterways and teach people how to reduce waste. With the help of volunteers, they have removed millions of litres of rubbish from the marine environment.

Community and local level

Iwi, scientists and local groups often lead work at a local level. For example, Tai Tū Moana involves Ngāti Rehua- Ngātiwai ki Aotea protecting local waters by managing invasive seaweed at Aotea: Great Barrier Island, see: https://www.ngatirehua.iwi.nz/tai-tu-moana for more information.
Leigh Marine Laboratory has helped create marine reserves, including New Zealand's first marine reserve at Goat Island.

Individual actions

Individual action is just as important. Everyday people can make a difference by reducing plastic use, joining beach clean-ups, or taking part in citizen science projects like Manta Watch (mantawatchnz.org)- or Marine Metre Squared (mm2.net.nz).

When actions at all levels work together, they help protect the moana for future generations.

Comprehension Questions

- What four levels of action help protect the moana?
- How are you and your community involved in action at different levels?
- What is happening in your community to protect the moana?

Student worksheet 7

Ocean action bingo

Complete as many actions as you can- draw a circle around completed actions. These have big impacts on the moana!

CLIMATE AND WATER ACTIONS

Try these actions to reduce carbon emissions.

Save water: take shorter showers

Compost food scraps

Buy natural products

Buy sustainably sourced seafood

Check, clean and dry watercraft to avoid spreading pests

Avoid flying long distances

Cycle or scooter instead of driving

BIODIVERSITY ACTIONS

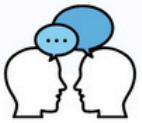
Try these actions to help biodiversity in the moana

Participate in citizen science

Only take what you can eat when fishing

Limit shellfish gathering

Speak up for more marine protection



Be aware of and support rāhui

Know local marine protection rules

Follow fishing rules and catch limits

WASTE ACTIONS

Try these actions to reduce the use of plastics and electronic waste.

Pick up rubbish

Recycle old clothes

Use your own container for takeaways

Avoid buying plastic wrapped items

Repair items instead of replacing them

Use reusable bags, bottles and cups

Recycle electronics

New Zealand Maritime Museum
HUI TE ANANUI A TANGAROA

Other helpful moana resources

Organisation	Link	Description
New Zealand Marine Studies Centre: University of Otago	New Zealand Marine Studies Centre | University of Otago	Bank of marine education resources at primary to secondary level with NZ context.
MERC- Sir Peter Blake Marine Education Centre	merc.org.nz	Education experiences, Outdoor education, marine experts. Based in Long Bay, Auckland.
LEARNZ virtual field trips	learnz.org.nz	Online field trips, enabling students to experience the environment without leaving the classroom. Features expert knowledge.
Young Ocean Explorers	youngoceanexplorers.com	Young Ocean Explorers helps children across Aotearoa learn about and connect with the moana through exciting videos, quizzes and challenges.
Seaweek – Toi moana toi tangata	seaweek.org.nz	Seaweek is an event in Feb/March each year to celebrate the sea. Features resources and events to be involved with.
Science Learning Hub	Seaweek resources — Science Learning Hub	Articles, videos and interactives about marine challenges, biodiversity and
DOC	doc.govt.nz/protecting-our-marine-world	Integrated curriculum teaching resource for years 1-8 about marine reserves, conservation and biodiversity.
Experiencing Marine Reserves (EMR) and Mountains to Sea Conservation Trust	www.mountainstosea.org.nz/national-programmes/emr	Experiential learning programmes connecting rangatahi to water and marine reserves.

Other helpful moana resources countinued

Organisation	Link	Description
LEARNZ virtual field trips	learnz.org.nz	Online field trips, enabling students to experience the environment without leaving the classroom. Features expert knowledge.
Marine pests NZ	www.marinepests.nz/schools	Learning about marine biosecurity and invasive species.
Manta Watch	mantawatchnz.org	Content about whai rahi: oceanic manta rays and their monitoring.
Marine Stewardship Council	msc.org/tekawaotangaroa	Ocean literacy lesson plans: Te Kawa o Tangaroa
SPCA	kids.spcaeducation.org.nz	Website including quiz about coastal habitats.
Gulf Journal	gulfjournal.org.nz	Stunning posters and resources about the Hauraki Gulf by Hauraki Gulf Forum
Ngāti Rehua website	https://ngati-rehua.squarespace.com/	Information about the Ngāti Rehua iwi.
State of the Gulf report, 2023	https://gulfjournal.org.nz/wp-content/uploads/2023/08/SOER-sum-online.pdf	Scientific information about the current state of Te Moana-nui-a-Toi and the wider the Hauraki Gulf.

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