

HAURAKI GULF MARINE PARK TĪKAPA MOANA



YOUNG
OCEAN
EXPLORERS

LESSON 13 - ROCKY SHORE

NZ CIRRICULUM LINKS:

Learning areas:	Achievement objectives:
Science	Observation Gather and interpret data Explain how living things are suited to their particular habitat and how they respond to environmental changes, both natural and human-induced.
English	Listening, Reading, Viewing
Maths	Measurement, estimation
Te Reo /Māori language	By learning te reo Māori, students are able to participate with understanding and confidence in situations where te reo and tikanga Māori predominate and to integrate language and cultural understandings into their lives ; strengthening Aotearoa New Zealand's identity in the world.

Overview

Look closely at a small part of the rocky shore to identify what is living there.

Learning intention

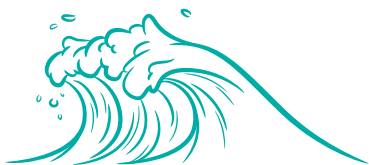
Tamariki are learning to observe carefully and identify living things in a rocky shore environment.

Success criteria

Children can identify several living things at the rocky shore.

LEARNING SEQUENCE

Based on the Inquiry model



Inspire

Provoke curiosity
and wonder



Explore/Educate

Gather information
Use / apply
learning



Activate

Reflect and act

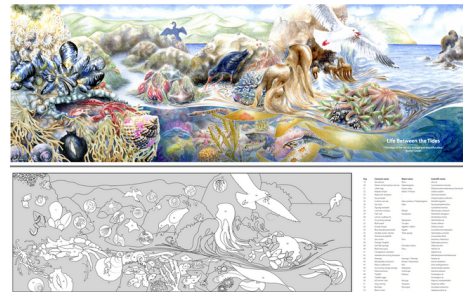
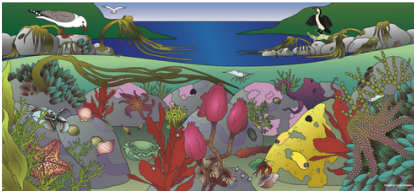
Background information for teachers:

A rocky shore is an intertidal area that consists of solid rocks. It is often a biologically rich environment and can include many different habitat types like steep rocky cliffs, platforms, rock pools and boulder fields. Because of the continuous action of the tides, it is characterised by erosional features. Together with the wind, sunlight and other physical factors it creates a complex environment. Organisms that live in this area experience daily fluctuations in their environment. For this reason, they must be able to tolerate extreme changes in temperature, salinity, moisture and wave action to survive. (from pathwayz.org)

Resources from the NZ Marine Studies Centre, University of Otago:

[Life between the tides poster to print](#)

[Life in a rock pool poster to print](#)



These posters are great to look at to get children used to observing carefully - good practice before your trip to the rocky shore.

[Marine Metre Squared](#) is a citizen science project from the NZ Marine Studies Centre, Otago. Tamariki closely study one square metre of a rocky shore, and take note of what living things are in that area. [Here is a 5 minute video of how it works.](#)



[Sign up here](#) to enter and access data.

LESSON PLAN

Rocky shore

Teachers are encouraged to choose and adjust activities to suit the learning needs and interests of their tamariki.

Teachers - there is a bit of prep work for today

You need to organise time at a rocky shore near you (see the **EDUCATE** options for an interactive online option if you are unable to visit a rocky shore).

You will need extra adults to help you make sure tamariki are safe near the water. Check your EOTC requirements - remember sunblock and sunhats! **You will need to time your trip for low tide.**

PRINT - a [data sheet](#) and an [identification chart](#) for each group of 4 students. ([Te reo ID chart here](#))

COLLECT equipment for each group of 3-4 students:

- a clipboard and pencil per team,
- a 4m rope per team (with a knot to mark each metre),
- a container per team for closer observations (an icecream container or takeaways container work fine),
- an icecream container lid per team with a 10x10cm square cut out of it (to represent 1% of the study area).



Inspire

 Allow approximately 10 mins

- **Question prompt** - What do you know about what lives on the rocks and in the rockpools? Discuss and make a list. Get an identification chart for each group and take time to look at what is on there. What is something you have not seen before?
- **Practise identification** - [use this slideshow](#) with the identification charts. Which ones can you identify?



What is this?





Educate

 Allow approximately 15 mins before you go on your rocky shore trip, plus trip time.

- How to do marine metre squared - [Read through this checklist](#) and / or [watch this video](#).



Video is 2:19 minutes

- Then, at school, practice setting out your metre square (rope) - what can you see inside that area? Take a close look.
- **GO ON YOUR TRIP TO THE ROCKY SHORE.** Use the data sheet and the ID chart to take note of which living things are in your square metre area.
- **OPTIONAL - Interactive** - if you can't take a trip to a beach / rocky shore you can look at these videos and pictures and see what you can notice.



Activate

 Timing will vary

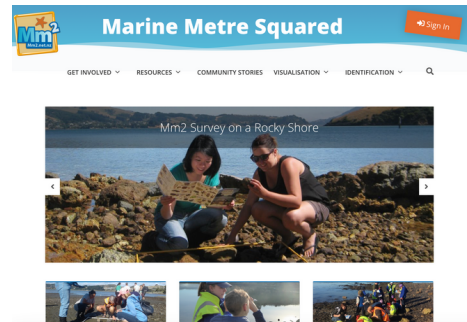
- **While outside pick up at least 1 piece of plastic or other rubbish** – make a difference in YOUR community. Log your rubbish data on the

[21 day challenge graph.](#)

Each daily entry goes into the draw to win amazing prizes for your class and school



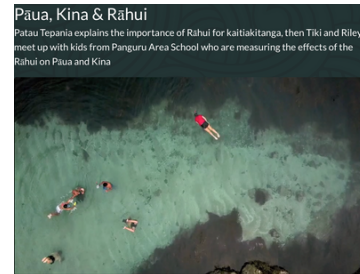
- **Be citizen scientists!** Log on to [MM2 website](#) and enter your data. You can conduct a marine metre squared survey another time (each term / each year) and compare your data. Are there more or less living things? What has changed? Why do you think it has changed?



EXTRA LEARNING IDEAS AND RESOURCES

- **Watch Young Ocean Explorers** [‘Paua, kina and rahui’](#) to see how metre squared projects can be used to track change.

Video is 5:49 minutes



- Do this [estuary i-spy](#) - great for younger students.



TAKE YOUR LEARNING FURTHER

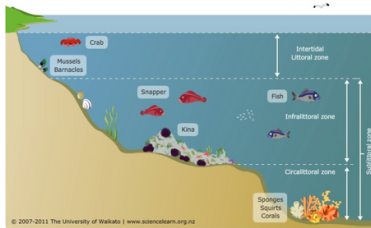
- Find out more about one of the species you saw today (or choose a species to research). Fill in this worksheet or create your own way of showing information you find out (poster, slide show etc).
- You need to include:
 - Species name
 - Scientific name
 - Where it lives
 - How big it grows
 - What it eats
 - Threats (what eats it or is bad for it?)
 - How we can help protect it
 - A picture of it (sketch or photo)



[You might like to print and fill in this recording sheet from the NZ Marine Studies Centre.](#)

EXTRA LEARNING IDEAS AND RESOURCES

- [Science Learning Hub info on rocky shore](#)



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Reef zones

As you go deeper into reef water, the animals and plant life change, from molluscs and cockles to seaweed then bivalves.

- Video - [Life in rock pools](#) (NZ Marine Studies Centre, Otago)



Video is 5:17 minutes

- Video - [While we're away](#) (NZ Marine Studies Centre, Otago). A fascinating look at what happens on rocky shores as the tide comes in.



Video is 2:38 minutes

Find out more:

There are many other lesson ideas from Young Ocean Explorers - choose another one. [Young Ocean Explorers](#) You can find out about some of the amazing creatures that live in or visit the Hauraki Gulf. There are also lessons on some of the amazing places in Tikapa Moana. Or you could explore ideas of how people are connected to the moana / ocean.