

# TOGETHER FOR OUR MOANA - WE'RE SHAPING OUR FUTURE

## MANTA RAYS / WHAI RAHI

### NZ CURRICULUM LINKS:

Learning areas:	Achievement objectives:
<p><b>Te Ao Māori</b> Te reo (language), tikanga (customs and traditional values)</p>	<p>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 ; strengthen Aotearoa New Zealand’s identity in the world.</p>
<p><b>English</b></p>	<p>Listening, Reading, Viewing</p>
<p><b>Science</b></p>	<p>Living things and how they interact with the environment. Explain how living things are suited to their particular habitat and how they respond to environmental changes, both natural and human-induced.</p>

## Overview

Find out about the graceful ocean giants that sometimes visit Tīkapa Moana.

## Learning intention

Tamariki are learning about the importance of the Hauraki Gulf Marine Park / Tīkapa Moana to the creatures that live and visit there.

## Success criteria

Children know what a manta ray is and can understand how big they can grow.

# 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:

*Mobula birostris* - the largest ray species in the world, reaching up to 7m wide - are found in tropical, subtropical and temperate waters. Oceanic manta rays are typically observed in our waters in the summer months, from November to June. The Hauraki Gulf, Tīkapa Moana - Te Moananui-ā-Toi, is considered one of New Zealand's oceanic manta ray hotspots, with more manta rays having been spotted in the waters between Hauturu (Little Barrier), Aotea (Great Barrier), Hen and Chicken Islands, and the Mokohinau Islands, than anywhere else in New Zealand!

They have the biggest brains of any fish. They are also the only species of fish to have passed the mirror test, proposing that mantas are actually self-aware. The only other animals to pass this test are chimps, dolphins, and humans! Unlike their cousins the stingrays and eagle rays, manta rays must forever keep swimming forward to pass oxygen over their gills to breathe. They are perfectly suited to their open ocean lifestyle and fully spread their wings, by travelling long distances and diving to great depths.

Giant manta rays trap zooplankton on their distinctive filter plates and periodically swallow. These filter plates are attached to the arches of their gills. They often swim in repeated backward loops or 'somersaults' to remain in a dense patch of plankton.

Manta rays are classified as endangered globally by the IUCN Red List of Threatened Species.

[DOC - manta ray info](#)



Giant manta ray

[Manta Ray facts from Auckland Whale and Dolphin safari](#)

Top 10 Facts You Didn't Know About Oceanic Manta Rays



# LESSON PLAN

## Manta Rays / Whai rahi

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



### Inspire

 Allow approximately 10 mins

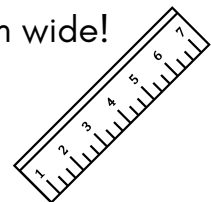
- **Watch this video** of [Riley's amazing ray adventure](#)  
*Video is 4:52 minutes*



- **Watch** this video of a [manta ray in the Hauraki Gulf](#)  
*Video is 24 seconds*



- **Measure** out the size of a manta ray - they can grow up to 7m wide!  
Compare this to the size of eagle rays (up to 2m long).





## Educate

 Allow approximately 30 mins

- **Watch** [this video about manta rays](#) to learn some facts. Extension - make a quiz for your classmates using facts from the video.

*Video is 2:03 minutes*

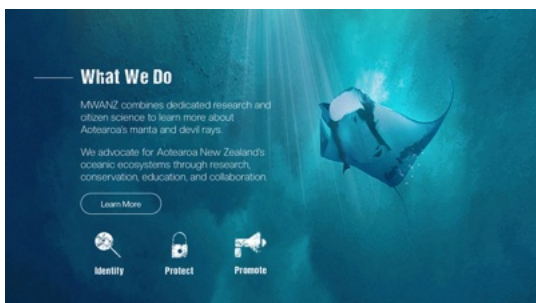


- **Identify manta rays.** Each ray has a unique spot pattern on their belly. [Look at this identification chart of mantas](#), and then see if you can name each of the rays on [this worksheet](#).
- **Research - Elasmobranchs** - Manta rays belong to a family called elasmobranchs. What other creatures are in this family? Here is some [information about Elasmobranchs](#).



Elasmobranchs		
Sharks, Skates, & Rays		
		
<ul style="list-style-type: none"> <li>• Streamlined body</li> <li>• Distinctly lobed tails</li> <li>• Teeth continuously replaced</li> <li>• Live birth and egg laying</li> </ul>	<ul style="list-style-type: none"> <li>• Flat body</li> <li>• Thick tail with thorns</li> <li>• No barb(s)</li> <li>• Egg laying (mermaid's purses)</li> </ul>	<ul style="list-style-type: none"> <li>• Flat body</li> <li>• Long, whip-like tail</li> <li>• Have barb(s)</li> <li>• Live birth</li> </ul>

- **Learn more** from [Manta watch NZ](#) they are doing amazing research in our local waters! If you ever see a Manta Ray in Aotearoa, this is where you submit a sighting!!!





## Activate

 *Timing will vary*

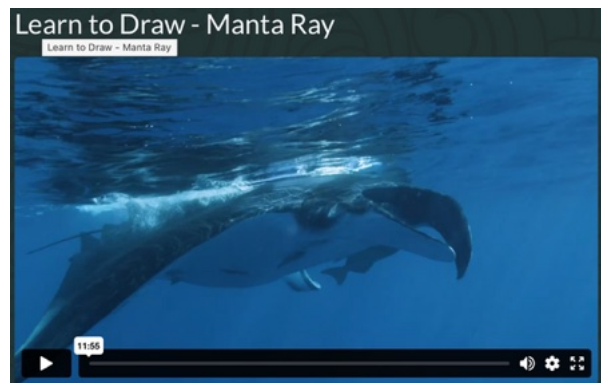
# DAILY ACTION



**MAKE A DIFFERENCE** for our moana - pick up at least 1 piece of kirihou / plastic each day. [Log how many pieces your class picks up on the Young Ocean Explorers website.](#)

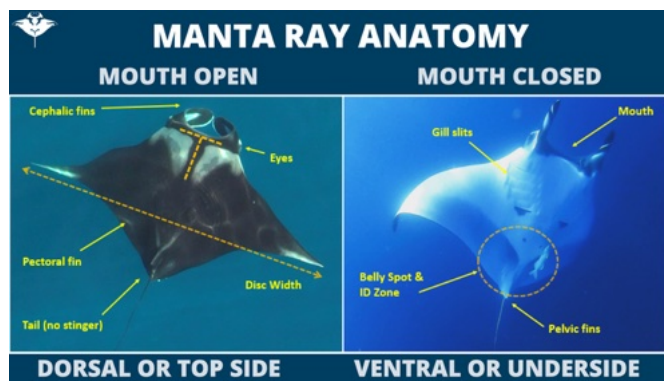
- [Learn to draw a manta ray with Young Ocean Explorers.](#) Write some facts about manta rays around your picture.

*Video is 11:55 minutes*



## EXTRA LEARNING IDEAS AND RESOURCES

- [Manta ray anatomy poster](#)



- **Read** [this article about a Manta Ray that washed up on a beach in Northland a few years ago](#). Scientists were able to study it to find out more about manta rays.
- [Threats to manta rays](#) - poster from WCS
- **Origami** - [make this origami manta ray.](#)