

TOGETHER FOR OUR MOANA - WE'RE SHAPING OUR FUTURE

FOOD CHAINS

Overview

Who eats whom in the ocean? What does a healthy and an unhealthy ecosystem look like?

Learning intention

Tamariki are learning to understand how species in New Zealand's ocean are connected, and how disruption to one species could affect others.

Background information for teachers:

Every plant and animal species needs energy or food to survive and grow.

A food chain shows how energy is transferred from one living organism to another via food. We need to understand how the food chain works so that we know what are the important living organisms that make up the food chain and how the ecology is balanced.

Plants make their own food by using energy from the sun in a process called photosynthesis. We call plants producers - they are always the start of a food chain. Eg Kelp, phytoplankton

Animals get their energy by eating other living things. Living things that get energy from eating other living things are called consumers. Some eat plants (herbivores), some eat other animals (carnivores) and some eat both (omnivores).

An example of a marine food chain:

SUN ----- KELP ----- KINA ----- SNAPPER ----- PEOPLE

[Information here from Science Learning Hub](#)

NZ CURRICULUM LINKS:

Learning areas:	Achievement objectives:
<p>Te Ao Māori Te reo (language), tikanga (customs and traditional values)</p>	<p>By learning te reo Māori, students can participate with understanding and confidence in situations where te reo and tikanga Māori predominate, and integrate language and cultural understandings into their lives, strengthening Aotearoa New Zealand's identity in the world.</p>
<p>Aotearoa NZ Histories Turangawaewae me te kaitiakitanga - Place and environment</p>	<p>Understand how places influence people and people influence places. Understand how cultural practices vary but reflect similar purposes. Understand how people view and use places differently. Understand how people make decisions about access to and use of resources.</p>
<p>English Listening, Reading, Viewing</p>	<p>Selects and uses sources of information (meaning, structure, visual and grapho-phonetic information) and prior knowledge with growing confidence to make sense of increasingly varied and complex texts</p>
<p>Science</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>

LEARNING SEQUENCE

Based on the Inquiry model



Inspire

Provoke curiosity
and wonder



Explore/Educate

Gather information
Use / apply
learning



Activate

Reflect and act

Success criteria

Children can create a food chain showing links between marine species found in NZ's moana.

LESSON PLAN

Food chains

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



Inspire

 Allow approximately 10 mins

- **Question prompt** - How are the living things in [these pictures](#) connected? Find as many connections as you can. Discuss.



Educate

Allow approximately 30 mins

Find out more about species that live in the moana in Aotearoa.

- **Watch** - [this YOE video - What is a food chain?](#)

Video is 1:17 minutes



- **Explore** this [Marine Ecosystems Interactive](#) from Science Learning Hub. Click on the items in the marine ecosystem to find out more from scientists.
- **When things go wrong** - find out what can happen when an ecosystem is out of balance. Watch this YOE video [Where did all the kelp go?](#) then discuss - what caused the kina barrens? *Video is 2:06 minutes*



- **Spot the difference.** Watch these two 360 videos from NZ geographic. What differences can you see? They are both areas in the Hauraki Gulf, why do you think they are so different?
 - [Goat Island Marine Reserve - snapper city](#)
 - [Off balance Did you hear the sound? Do you know that it is the sound of kina eating!](#)



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.](#)

- **Draw** a food web to show the link between snapper, kina, kelp, crayfish and people. Use arrows and label your food web. If you have younger tamariki you could [PRINT this template](#) and children can cut and paste them with arrows to show the links. EXTENSION - label the producers (makes their own food using energy from the sun), and the consumers (eats other living things).
- **Look at this community making a difference!** Watch the Young Ocean Explorers video '[pāua, kina, and rahui](#)'



Pāua, Kina & Rāhui

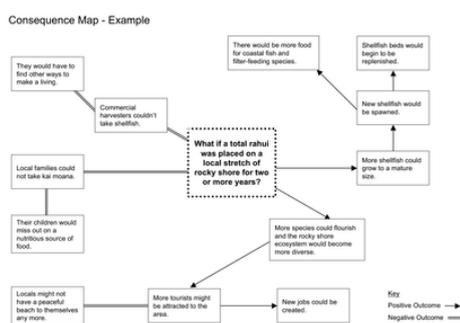
Patau Tepania explains the importance of Rāhui for kaitiakitanga, then Tiki and Riley meet up with kids from Panguru Area School who are measuring the effects of the Rāhui on Pāua and Kina



Video is 5:49 minutes

EXTRA LEARNING IDEAS AND RESOURCES

- [Who eats who?](#) This **printable booklet** from the NZ Marine Studies Centre will help younger students learn more. It is based on the South Island species, but shows the same principle of a food web.
- **Extension** – Make a consequence map about overfishing. Think up your own 'what if...' question for the centre. [Consequence map](#) (originally from TKI)



- [Learn to draw - Snapper](#)
- **Read** this article on [overfishing in Tikapa Moana / the Hauraki Gulf](#). Forest and Bird Magazine.

Magazine article

Restoring the Hauraki Gulf

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Conservation... Oceans
Issue date: Thursday, 1 Mar 2018
Resource ty... Magazine article

Our native birds need you

Take a bold stand towards a predator-free future for Aotearoa. Let's make the dawn chorus resound for generations!

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Crayfish. Credit: Shaun Nelson