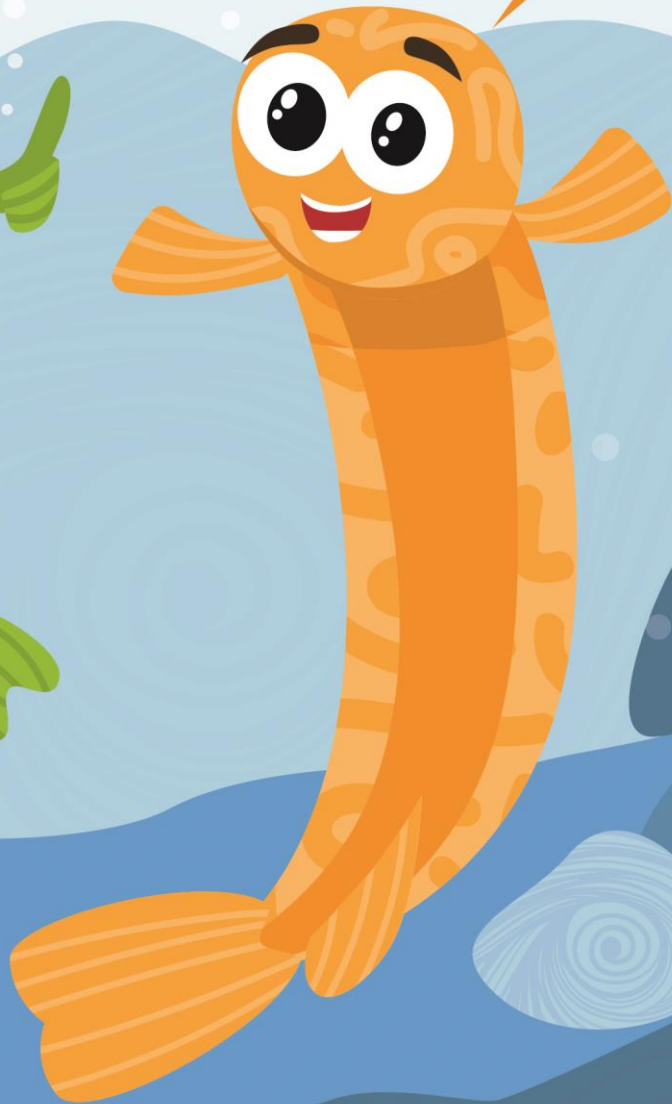


HE PUNA WAI

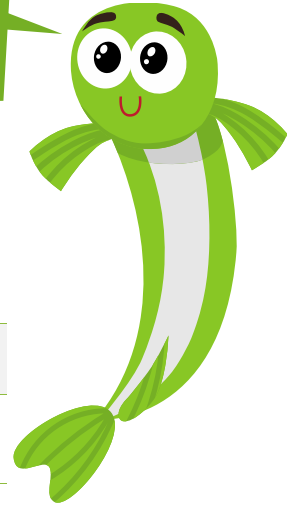
Hi I'm Ian the
Inanga



I'm Koro the
Kokopu



Let's work together to care for water!



Looking after water

Activity	Subject Areas	Inquiry Stage
8	Science, Education for sustainability	5. Whakaaro wai: Reflect and share, 6. Mahia wai: Act for water

Q Overview

How can we make a difference for water in our environment?

Key Concepts

- We can all help to keep water clean and healthy.
- Schools can work together with whanau, iwi and community to protect and preserve the health of our water.

🔗 Curriculum links

New Zealand Curriculum

Learning Areas	Levels	Years
Science		
Nature of Science: Participating and contributing		
Health	3-4	5-8
Healthy communities and environments; People and the environment		
Other curriculum areas: Technology, Education for sustainability.		

🧠 Learning intentions

Students are learning to:

- Protect and preserve water in their local environment.
- Take action and reflect on their action.

📖 Success criteria

Students can:

- Plan for conserving water and/or protecting and enhancing local waterways.
- Implement and reflect on their plan.

Background information: Looking after water

The future of water in Taranaki

In the future, we will need to provide water to a growing number of residents in Taranaki. Our precious water will need to be carefully managed, to balance people's needs with the requirements of the environment. Cultural, social, political, environmental and economic factors will need to be considered. Water is a taonga (treasure) that we must care for and sustain for future generations.



Kaitiakitanga and water

Kaitiakitanga is a system for looking after the environment in order to maintain the balance of everything within it. Kaitiakitanga can be loosely translated into English as protection or guardianship.

As beneficiaries of the water, each and every one of us has an obligation to take care of and protect our water/waterways. Everyone can exercise kaitiakitanga and help our streams and waterways.

Kaitiaki are tangata whenua who hold the responsibility to protect and look after an area's resources. They act to restore ecosystems through a holistic approach, recognising that all things are interconnected.

Te mauri o te wai: Water and life force

People, animals, water, plants and the environment are linked through mauri: a life force that exists in all living things. Mauri must be considered and protected. Mauri or life force can be sensed: if there is abundant life, flowing water and a clean, clear atmosphere, the mauri can be said to be strong. Humans have a responsibility to keep mauri in balance, keeping the physical and spiritual state of the environment intact.

Learning experience: Looking after water

These are suggestions only and are intended to be altered to suit your students and their needs.

Resources

School Journal article: L2 Oct 2013	Kaitiaki of the stream: School Journal Level 2, October 2013
Student Activity Sheet 9:	Wānanga wai find your flow reflect on inquiry Page 4
Student Activity sheet 10	Looking after our water Page 9
Presentation:	Mahia Wai, looking after water

Inquiry stage 4: Wānanga wai find your flow



Reflect on your inquiry and discuss findings from the other activities you have completed. What new knowledge do you have about water in Taranaki?

What have you learned about:

- Streams, rivers and other natural water sources in your local area.
- Drinking water and how much water we use.
- The stormwater system and where it goes.
- The wastewater system and how we can look after it.

Organise your information and write a summary of your inquiry findings.

Present your findings to others through a blog, story, newsletter or assembly item.

Record your ideas on the template below

Where to next?

Think about what you would like to know about next. What are the important issues for water in your community?

Other resources

- Wellington Water LEARNZ trip video: The three waters; <https://vimeo.com/218610926>
- Removing solids from wastewater LEARNZ virtual trip video: <https://vimeo.com/218768528>
- Treating wastewater LEARNZ <https://vimeo.com/218765817>

Wānanga wai find your flow

Reflect on your inquiry.

What were your ideas about water before you started your inquiry?

What have you learned about?

Streams, rivers and other natural water sources in your local area

Drinking water and how much water we use

The stormwater system and where it goes

The wastewater system and how we can look after it

Organise your information and write a summary of your inquiry findings.

How will you present your findings to others?
e.g. through a blog, story, newsletter or assembly item.

Inquiry stage 5: Whakaaro wai

Reflect and share about water

Discuss student connections to local environments and waterways. After learning about water and streams during their inquiry, students can reflect on their new understandings and how they feel about local waterways.

Discuss questions such as:

- Are local streams filled with life? Do they look clean and clear?
- Is the mauri (life force) strong in your awa (river) and streams?
- What were your initial predictions and ideas about water in Taranaki?
- Were your predictions supported by your findings?
- What new understandings and skills have you gained during the learning inquiry?
- How can you share your new knowledge with others? Create a blog/ newsletter/ presentation or webpage about your inquiry findings. Emphasise what people can do to help water during your sharing.

Kaitiakitanga and water

Students can share their inquiry plans and find others who asked similar questions. These pairings could be used to form inquiry groups that work together to find answers to a complex question.

- Discuss the concept of kaitiakitanga. Students can read the journal article: Kaitiaki of the stream: School Journal Level 2, October 2013. In this article, Pātaka Moore of Te Wānanga-o-Raukawa in Ōtaki talks about the history of Ōtaki and how Māori lived near the stream and used the water for storing food/kai and harvesting eels. The health of the streams declined over time, due to pollution and erosion. The article discusses what it means to be a kaitiaki and the concept of kaitiakitanga.
- View the website: Maori maps: <https://maorimaps.com>
This website describes iwi and hapu associated with marae and gives their contact details. Find out about your local marae, iwi and hapu. How are tangata whenua already working to help waterways in your neighbourhood? Is there a way your school could contribute or help?

Inquiry stage 6: Mahia wai

How can you work with your community for the long term health of water in your area? List your ideas and work on a plan for action (see page 9).

- How are you currently using water? (Reflect on activity 6, to see how much water you are using and if this needs to change).
- During the learning inquiry we also discovered that New Plymouth District residents generally use more water than other New Zealanders. What can you do about this?
- What did you find out about stormwater? What pollutants are getting into streams?
- What problems have you encountered with wastewater?

The future of water in Taranaki

- Discuss what the future could look like for water and streams in Taranaki. What is the best case scenario? What is the worst-case scenario?
- How can we make sure a positive future for water (the best case scenario) will happen? What effect do we as individuals have on the future?

Reflecting on learning

- Students can reflect on their inquiry and share their findings with the community.
- View the presentation Mahia Wai looking after water. Share ideas about water conservation and show students an example of a successful water conservation action projects.

Extending learning

- How can you work with others to build on your water action? Identify restoration groups or community groups you could potentially work with.

Mahia wai action examples

Protecting streams

Tackling toxic cigarette butts

Lorella Doherty from Rethinking Plastic Revolution has single-handedly tackled the issue of toxic cigarette butts in stormwater drains. Remember, if you want to pick up cigarette butts in your area, it is best to use gloves as the butts can carry disease and nasty chemicals.

[Why one Taranaki woman is collecting 10000 cigarette butts.](#)

[New Plymouth woman picks up more than 12000 cigarette butts.](#)

Urenui school students paint the drains

Urenui School students stencilled messages on their stormwater drains to let people know where the water goes. The stencilled designs will help people think twice about what goes down the drains, into streams and the sea. See:

[Urenui School students learning goes down the drain.](#)



Waitara High School Mangahinau Stream study

Waitara High has been working with Department of Conservation (DOC), Taranaki Regional Council, Otaraua Hapu and Waitara Alive to investigate the health of the Mangahinau Stream.

They have contributed to pest plant and rubbish clearing, extensive planting and fencing over the past seven years. Students were testing and comparing the quality of the stream water at the fenced and planted end of the stream to the unfenced, unplanted end. What they found surprised them! See:

[Waitara High School Stream Study.](#)



Photo (top right) from an early plantings in 2013. Over the years there has been huge involvement from the wider Waitara community including iwi, hapu, schools, Department of Conservation, Taranaki Regional Council, Friends of the Waitara River, Waitara Alive and many others.

Saving water/ water conservation

Brooklands Zoo is helping leopard tortoises and saving water at the same time, by installing rainwater tanks. The tanks provide water for plants that the tortoises eat, as well as for cleaning their paths and housing. See: [Wai Warrior message brings tasty reward for leopard tortoises](#)

Monitoring water usage at school

How much water does your school use per day or per child? Do you have leaking pipes? How much is that costing your school? Using your school water meter your students could get involved in monitoring water usage. The NPDC Three Waters Educator can assist with these projects contact edthreewaters@npdc.govt.nz



Drinking water emergency water supply

In times of emergency, we need to have some water stored. Be prepared by having a supply of fresh, clean drinking water set aside in case of an emergency at home.

See the articles below for examples of what happened at times when New Plymouth District residents needed emergency water supplies:

[Repairs to pipe damaged during ex-cyclone Gita completed.](#)

[Boil water notice issues by NPDC.](#)

[Report into Cyclone Gita Response.](#)

Egmont Village School- water conservation

With the support of Sustainable Taranaki's Impact Programme, Egmont Village School installed a 1000L rain water tank to water their school vegetable garden. This was a year 8 student-lead sustainability project. Have a look at the video they produced to share the messages about water conservation: [Egmont Village School video.](#)

Think before you flush

Promoting the three P message within your community, this will help protect the environment and prevent sewage overflows. There are lots of cool videos that can help get the message across into the community or you could make flyers. What other fun ways could you talk about pee poo and toilet paper?

[Think before you flush NPDC](#)

[Tauranga Save our pipes from wipes](#)





Student Activity Sheet 10

Plan for looking after water

We aim to:

How will we do this?

Steps in our plan:

Save water

Protect and enhance our waterways

- 1.
- 2.
- 3.
- 4.

What will we need?

Possible barriers:

How will we overcome

Which issue will you target?

Who can you work with?