

HE PUNA WAI

Hi I'm Ian the
Inanga



I'm Koro the
Kokopu



Inquiry into water

Kia ora, I'm Koro the kōkopu. Let's look into water!



Activity	Subject Areas	Inquiry Stage
2	Science and English	2. Pātai wai Ask about water

Q Overview

We all have knowledge of and experiences with water. Let's reflect on what we already know and then think about what makes us curious about water.

Key Concepts

- Reflecting on our knowledge and experiences of water.
- Developing our curiosity, asking questions about water.
- Start a learning inquiry.

🔗 Curriculum links

New Zealand Curriculum

Learning Areas	Levels	Years
Science: Nature of Science: Investigating in Science		
English: Reading, viewing, writing	3-4	5-8
Other links: Te reo Mā ori, Environmental Education for sustainability		

🧠 Learning intentions

Students are learning to:

- Explore the context of water and use the inquiry learning model to participate in student-led inquiry learning.

📖 Success criteria

Students can:

- Ask relevant, rich questions about water in order to reach understandings and develop deeper knowledge, and acquire new skills and capabilities.

Whakatauki

Ko te wai te ora o ngā mea katoa
Water is the life-giver of all things

Background information:

Inquiry into water

What is a learning inquiry?

Inquiry learning is a constructivist approach where the student is at the centre of their learning. Students are driven by their own curiosity and questions, forming and developing a learning inquiry to investigate aspects of the topic and build a depth of understanding through questioning, thinking and research.

During an inquiry, students have learner agency and choose their learning pathway with guidance from a teacher, using activities and resources to support their learning journey. Inquiry incorporates a variety of thinking skills and information literacy skills, and integrates well with digital technology. By the end of the learning inquiry, students will have a deep, multi-faceted understanding of the topic beyond just facts.

The learning inquiry could delve into subjects such as:

- Water's journey: the science and geography.
- How people affect water.
- Water challenges and issues for your area.
- Māori perspectives.
- Experiencing water and testing the health of local water.
- Acting to improve the health of the water around you.
- Any subject you are interested in!

Vocabulary

Inquiry	Question	Investigate	Findings	Sharing
Action	Student-led	Information	Understanding	

Useful websites

TKI: student inquiry:

<http://elearning.tki.org.nz/Teaching/Future-focused-learning/Student-inquiry>

Teaching/effective pedagogy TKI video: Inquiry learning- from knowledge to understanding:

<https://nzcurriculum.tki.org.nz/Curriculum-stories/Media-gallery/Effective-pedagogy/Inquiry-learning>

Learning experience: Inquiry into water

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

Resources

Presentation:	Taranaki He Puna Wai
Integrated inquiry cycle	Page 5
Student Activity Sheet 2:	Inquiry plan for water in your environment Page 6
Student water learning journal	Page 8-10

Introducing knowledge

Before starting to develop inquiry questions, students should be introduced to the topic of water through an activity (such as activity 1: Water in Taranaki) or the story of a local water body.

An inquiry could also begin with play-based learning: offering several water related objects for students to encourage free water play. View slideshow: *Taranaki: He Puna Wai*

Use your local water bodies – streams, rivers, lakes and the ocean – as a context and starting point for your learning inquiry.

Integrated inquiry cycle

Introduce the *Integrated inquiry cycle*, see page 5

Students can examine the cycle's steps and describe what their intentions for learning are.

Briefly explain the steps in the cycle.

1. Rukua

Immerse in water

At this first stage we introduce students to the context of water and reflect on their knowledge and prior experiences with water.

2. Pātai wai

Ask about water

Now that students are immersed in the topic, they begin to wonder and form rich questions about water.

3. Pūhoru

Splash around

Students now begin to follow their own learning pathways and find out more about water. This stage could include finding out about the three waters: drinking water, stormwater and wastewater.

4. *Wānanga wai*

Find your flow

Organise and break down your findings. Assess the available information and then organise and summarise.

5. *Whakaaro wai*

Reflect and share about water

Students can now reflect on the implications of their new knowledge, reflect on new skills and collaborations and share their findings with their communities.

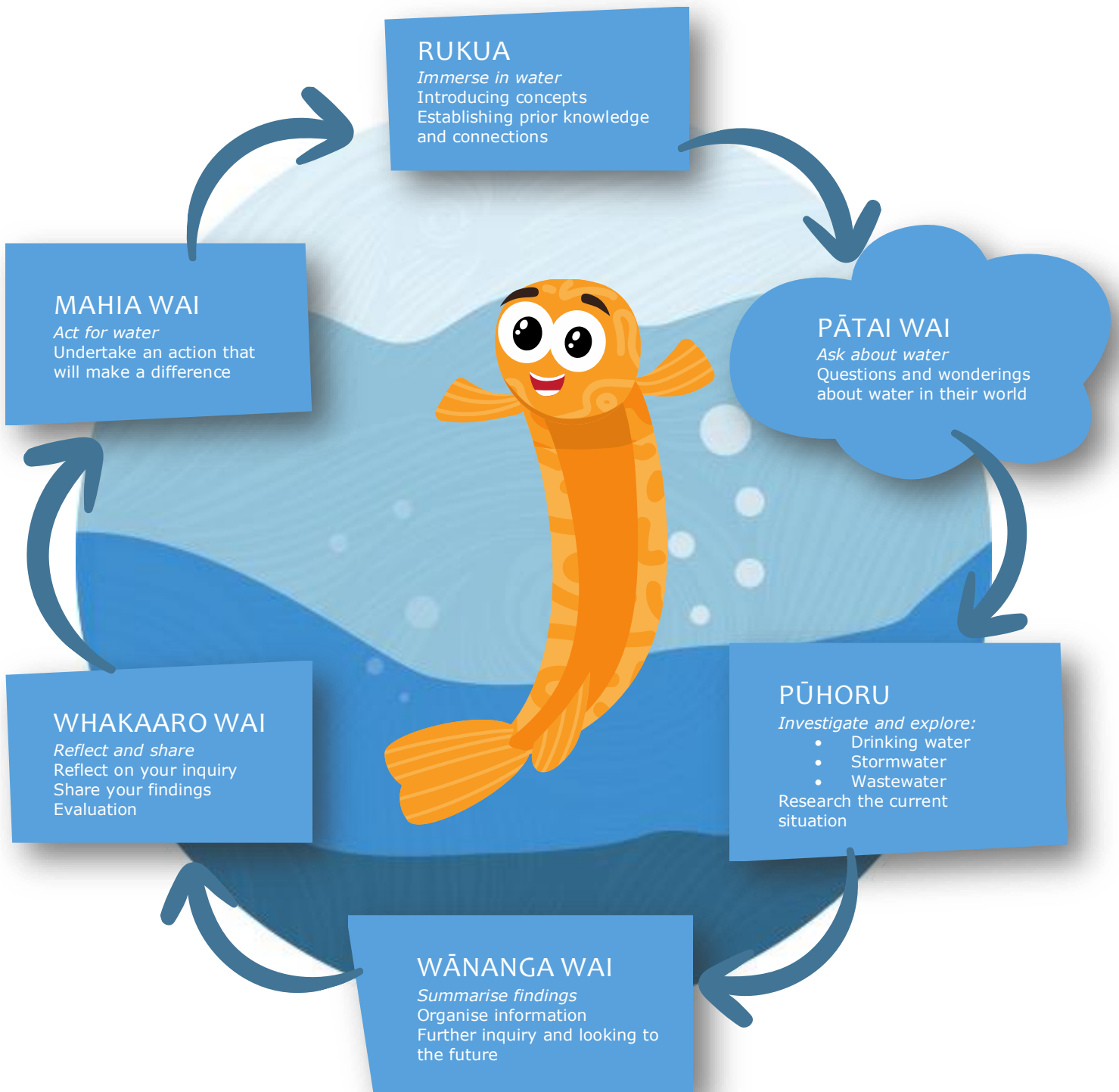
6. *Whakaaro wai*

Act for water

With new understandings and skills, students can make a difference for water in their community with a collaborative environmental or social action.

Students need to understand the basics of water in their area, and then identify areas for inquiry. You can use these activities and resources or research further as part of an inquiry.

Integrated inquiry cycle



Student Activity Sheet 2

Inquiry plan for water in your environment



Describe any water in your area. Are there any rivers, streams or lakes nearby?

What have you noticed and observed about water near you?

What are your questions about water?

These could be about rivers, streams, drinking water, stormwater, wastewater or other water.

Planning investigations

How can you answer your questions? Where can you find information?

Which people, groups and organisations are involved with water?

Make a prediction about water based on your knowledge, observations and experiences:

Inquiry stage 2:

Pātai wai

Ask about water

Record any questions you have about water. Record your prior knowledge and questions on Student Activity Sheet 2: Inquiry plan about water in your environment on page 6.

Incorporating Māori perspectives in your inquiry

- Contact local iwi through your local council, local marae or through school/family connections. This ideally should be done at the start of your inquiry. See <https://www.newplymouthnz.com/Council/Tangata-Whenua> or <https://maorimaps.com> for information and contact details of marae and iwi in your area.
- Use expert advice from tangata whenua when considering your streams and waterways. Take into account cultural aspects of the waterway such as: history and heritage sites, taonga species, traditional uses (e.g. cultural harvesting of eels, shellfish, watercress or other food sources), mauri and kaitiakitanga in the area.
- Consider possibilities of how your school might contribute to the work iwi are already doing as kaitiaki of the waterways.

Reflecting on learning

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.

Extending learning

What other questions do you have about water? Start a learning journal and note down questions and information as you go.
See the example water learning journal on pages 8-10.

Water learning journal



Rukua

Immerse in water

At this first stage we introduce students to the context of water and reflect on their knowledge and prior experiences with water.

What prior knowledge do you have about water?

What are some of your memories of being in and around water or using water?

Look at some of these resources about water in Taranaki

Pātai wai

Ask about water

Now that students are immersed in the topic, they begin to wonder and form rich questions about water.

What are your questions about water?

Pūhoru

Splash around

Students now begin to follow their own learning pathways and find out more about water. This stage could include finding out about the three waters: drinking water, stormwater and wastewater.

Which water would you like to find out about?

How are you going to understand this water?

Try looking at the Science Learning Hub to start your learning journey: <https://www.sciencelearn.org.nz>

Wānanga wai

Find your flow

Organise and break down your findings. Assess the available information and then organise and summarise.



Whakaaro wai

Reflect and share about water

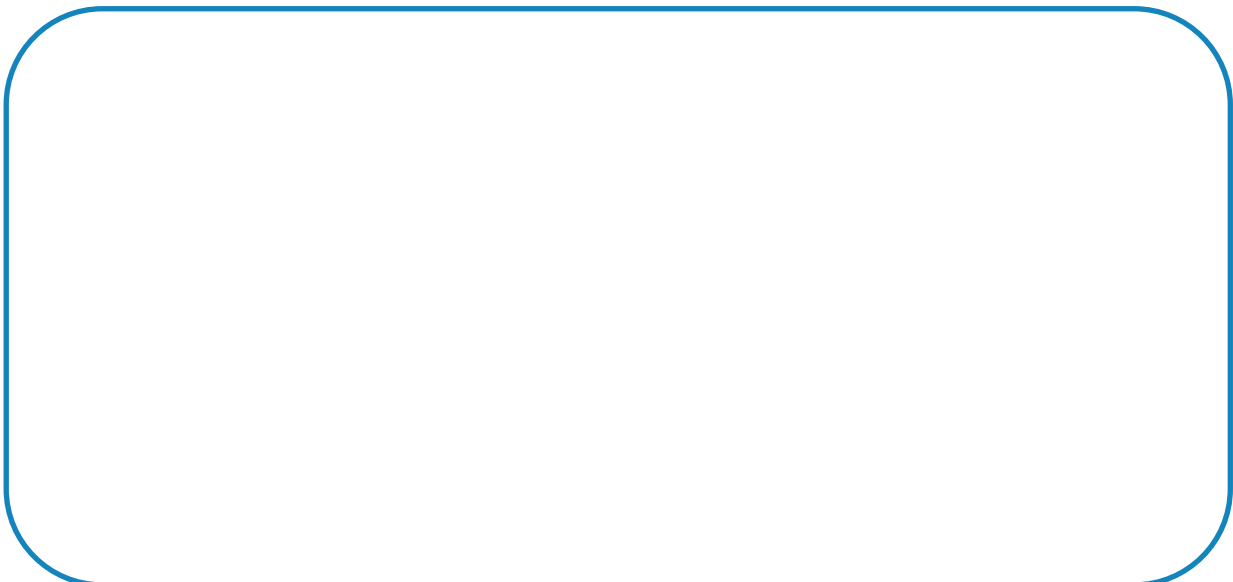
Students can now reflect on the implications of their new knowledge, reflect on new skills and collaborations and share their findings with their communities.



Mahia wai

Act for water

With new understandings and skills, students can make a difference for water in their community with a collaborative environmental or social action.



Use this plan to help decide which mahi you will do to help your local waterways:

Student Activity Sheet 8: Looking after our water