Kaitiakitanga of taonga species

NZASE resource

Mere Manning (Kahungunu ki te Wairoa) is an Earth and Space Science teacher at Taradale High School, where she is exploring using both te ao Māori and traditional science perspectives in a new unit.

An enduring competency

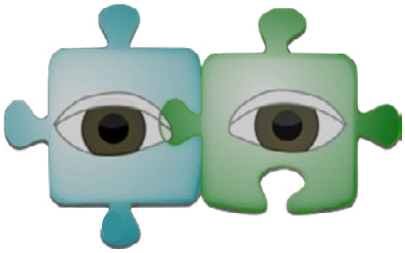
NZCER has recently published a document to provide a foundation on which to build science curricula (Hipkins et al., 2022).

One of its four enduring competencies is about drawing on different knowledge systems. We want students to use the lenses of both mātauranga Māori and science (and other relevant systems) to view, understand and act in the world as engaged citizens.

Doing so honours Te Tiriti o Waitangi and respects the increasing diversity of students in our schools.

It is important that students see both knowledge systems as valuable on their own terms, without comparison or assimilation. This weaving may take the form of braided rivers or two-eyed seeing in different models.

Rose Hipkins says: "Mana ōrite in science means recognising that both mātauranga Māori and science are valuable, rigorous, and reliable knowledge systems for understanding the natural and physical world, and particularly for understanding how to live sustainably together in Aotearoa New Zealand," (Hipkins et al, 2022, p. 8).



Two-Eyed-Seeing, an indigenous Mi'kmaq concept from Canada's north-east. Image, Institute for Integrative Sciences and Health.

Genomics of taonga species

Mana whenua have a role as kaitiaki in managing Māori interests in genetic resources (including biological samples and data) relating to taonga species.

Hudson et al. (2021) have developed guidelines on how to approach genomic research involving taonga species in a way that effectively upholds Treaty principles. These principles are important when engaging with Māori about conservation efforts and breeding programmes for taonga species.

Their guideline, *Te Nohonga Kaitiaki* (TNK), has three guiding principles:

- **Kia tau te wairua o te tangata** – Consider the spirit in which a taonga is shared and used.
- **Kia pūmau te mana o te tangata** – Ensure the enduring authority of kaitiaki to exercise their tino rangatiratanga.
- **Kia hiki te mauri o te kaupapa** – Ensure the purpose considers the whole ecosystem balance.

It also has three operating principles:

- **He whakapapa tō te taonga** – Taonga have relationships with people and place
- **He mauri tō te taonga** – Taonga are essential components of the ecosystem
- **He kaitiaki tō te taonga** – Taonga are protected through intentional action.

Ākonga will explore both these documents.

Braided rivers weave different currents. Kamau Te Urua/ Tasman River, by Emma Willett.

The kaupapa

Mere is planning a new unit for the junior curriculum in 2024. She is conscious that the final draft of *Te Mātaiaho*, the refreshed NZ curriculum, is imminent. With the current focus on local curriculum, it is important to connect with students' lives and real-world problems.

In this Yr 10 unit, Mere hopes to use the concept of Two-Eyed Seeing. Her ākonga will learn to see from one eye with the strengths of Māori Indigenous knowledge, and key principles of wairua, mauri, mana and kaitiakitanga. From the other eye they will see with the strengths of Western science knowledge and ways of knowing.

Ākonga will use Two-Eyed Seeing to explore a real world kaupapa: Kaitiakitanga of taonga species. Mere hopes that ākonga will see the important connections to their everyday lives while they continue to develop their Nature of Science capabilities.

Mere is aware that she needs to have the lessons unfold so that they allow Māori students to bring their experiences and world views to the topic, but also ensure that these ākonga can see themselves in the narratives they explore.

Before the lesson detailed here, students need to have learnt about ecology, especially ecological niche, habitat and adaptations.

Ako tāpua tuatahi/Key learning idea one: Relationships of hapū with te taiao

***OUTCOME**: Ākonga understand Māori/Hapū relationships with the environment.*

Ākonga will explore how whakapapa shows the intricate spiritual relationship hapū have with Io Matua Kore. Through activities in tuakana-teina groups they will investigate the key principles of whanaungatanga, wairua, mauri, mana and kaitiakitanga – handed down from Io Matua Kore through whakapapa to all descendants of Ranginui and Papatūānuku.

They will learn how hapū are continually striving to maintain the mana bestowed upon them by caring for and nurturing resources and their mauri for future generations.

Ākonga will see through a te ao Māori lens as they learn about the sacred contract between Māori and atua – kaitiakitanga – and about their own role as kaitiaki.

Ako tāpua tuarua/Key learning idea two: What is a taonga species?

***OUTCOME**: Students can explain what a taonga species is and understand their te Tiriti connection.*

Ākonga learn about what is meant by a taonga species as they also learn key skills, such as how to determine the reliability of information, and to paraphrase/summarise information from pages 42, 43 and 46 of TNK.

Ākonga, through mahi rangahau and lab work, look at Aotearoa taonga species and the significant role they have in te ao Māori.

Three taonga species.
***Top**: Kākahi/freshwater mussels, from Re:News, TVNZ.*
***Left**: Northern kōura/saltwater crayfish, by James Cooper.*
***Below**: Kirirua, kūwharuwharu or ōrea/longfin eel, from video by Murray Neill.*

Ako tāpua tuatoru/Key learning idea three: Exploring the guiding and operating principles

***OUTCOME**: Ākonga understand the guiding and operating principles.*

Through mahi kāri, ākonga are introduced to these principles on p16 and 17 of TNK. The six principles are put on cards, using text from the document – English on one side, te reo Māori on the other.

Groups are each given one principle and they have 10 minutes to work out how they can explain its meaning to the rest of the class or give an example.

Ako tāpua tuawhā/Key learning idea four: Exploring the real world context

***OUTCOME**: Ākonga understand the Wai 262 Claim.*

As a whole class, ākonga explore and discuss the Te Tiriti and the Wai 262 Claim on p34-36 of TNK. They consider how this claim is important to taonga species.

They explore the obligations of both groups, Māori and Crown, and why is it important to have a Māori input where genomic research involves taonga species. Mere encourages ākonga to look at the three kete (p36) and note their key principles. (They will refer to these in their final kōrero.)

Te Mahi Whakamutunga/ Making connections

***OUTCOME**: Ākonga apply their understanding to a specific scenario and present their findings.*

Ākonga will bring all their learning and understanding together with a scenario: They as mana whenua will prepare a presentation of information for an organisation wanting to work with them on conservation efforts; or perhaps a breeding programme for their taonga species.

In groups, ākonga will choose a species, give all its names, and explain why it is a taonga species. Mere is in Te Matau a Māui Hawke's Bay, so ākonga can explore taonga species at areas such as Te Angiangi Marine Reserve in Shoal Bay; river and estuary species such as kōura, tuna or īnanga; shellfish out in the bay; and species at the Pekapeka wetland.

The groups will mahi rangahau about this species to find out how to help it better survive. (This may involve the mahi of local hapū, and regional council scientists.)

Ākonga need to consider where exactly the taonga species lives, and how it is adapted to live and survive there. How can we fulfil the requirements of the principles and the specific objectives of TNK where their taonga species is concerned? How can we honour Te Tiriti o Waitangi, affirm the rangatiratanga of kaitiaki over taonga species, and reiterate the mana of hapū and iwi?

Once they have decided how to do this, each group needs to present a summary explanation to the organisation they will be working with.

This plan will be refined further after trialling with a class. Mere's goal is to have several units of 1-2 weeks with the Two-Eyed Seeing approach and science capabilities woven into mātauranga Māori contexts. She hopes that these units will fit seamlessly in the new curriculum when it is released.

References

Hipkins, Tolbert, Cowie & Waiti, 2022, *Enduring competencies for designing science learning pathways*, NZ Council for Educational Research.

Hudson, et al., 2021, Te nohonga kaitiaki: Guidelines for genomic research on taonga species, Te Kotahi Research Institute.

Ngā Kupu

Ako – To learn, study, teach, advise
Kaitiaki – Guardian, steward, caretaker
Kaupapa – Subject, topic, purpose
Mahi kāri – Working with cards
Mahi rangahau – Research
Mana ōrite – Equality
Mauri – Life force or essence
Nohonga, position
Taonga – Treasured
Tāpua – Be prominent, significant
Te ao Māori – Māori worldview
world, environment
Tino rangatiratanga – Sovereignty, self-determination, autonomy
Tuakana-teina – Older with younger learner
Wairua – Spirit, soul.

Te Aka Māori Dictionary and *Paekupu*