

## A mātauranga framework for L1 Science

### Poipoia ngā mokopuna, ngā rangatira mo āpōpō.

Mātauranga Māori encompasses traditional knowledge and is becoming increasingly integrated into education, scientific research, and environmental policy in Aotearoa New Zealand. By presenting a mātauranga framework for Science, ākonga will be enabled and empowered to incorporate the indigenous knowledge that has long been undervalued.

When approached from a holistic mātauranga Māori perspective, science investigations are underpinned by whakapapa. Whakapapa and the interconnected aspects of the taiao, and the mauri of the taiao, are the first aspects to consider in mātauranga-based teaching and learning within NZC Nature of Science activities. Following a process of wānanga allows collaborative engagement in a body of knowledge. When a Level 1 Science course is viewed holistically using this mātauranga framework, assessment will naturally drop out of the teaching and learning programme throughout the year.

Within Science, ākonga will learn that **manaakitanga** equates to not only the wellbeing of the community, but also the wellbeing of the whenua. By applying manaakitanga to the taiao, ākonga will better recognise that the wellbeing of the environment is intertwined with their own wellbeing.

**Whakapapa** describes this interconnectivity between all organisms in the taiao. Ākonga will consider who they are in the world and how they can contribute to Aotearoa and beyond. Through studying Science, ākonga will develop knowledge and skills that can be applied to their own rohe, benefiting the wellbeing of their whānau, community, and taiao.

Ākonga will learn how scientific knowledge can be used to protect and restore the taiao, ensuring the preservation of the natural environment for future generations. By developing an understanding of **kaitiakitanga**, ākonga will appreciate the importance of environmental management in Aotearoa New Zealand and learn how their own actions can be mutually beneficial for both tāngata and the taiao. Beyond their own contribution to the protection of the taiao, they will learn that **kotahitanga** and collective action is key to tackling important scientific issues.

Through reflective **wānanga** and **mahi tahi**, science learning allows ākonga to enquire, investigate, and gain knowledge. For ākonga Māori, demonstrating the value of mātauranga Māori is key and may inspire the development of **whanaungatanga** with kaumātua and iwi to explore concepts further. Importantly, ākonga Māori will learn about the growing field of scientific research that draws upon mātauranga Māori to enrich understanding, and feel empowered and inspired to pursue STEM pathways. Using science methodology, via whakaaro, ākonga can apply knowledge from the classroom and put their findings into practice, and thus engage in whakamātau to give back to Aotearoa New Zealand and the Pacific.

Listen carefully to the science communication around you, discern the good from the bad, engage, practice, and test; these are the actions of an emerging rangatira. By approaching science with this method, understanding and knowledge will develop. Studying science will allow our rangatahi to reach for a state of **māramatanga**, so they may contribute and give back to the world, and to their environment.

In an increasingly complex world, with increasingly multifaceted challenges, many future jobs are predicted to require some sort of STEM capability. In Aotearoa New Zealand, ākonga are the leaders of tomorrow and, therefore, need to feel supported and inspired to access pathways that lead to

STEM careers. This is particularly important for ākonga Māori, as tangata whenua are currently underrepresented in STEM-related industries.