



PŪNIU RIVER CARE INC.
A REGISTERED CHARITY

TE AUKAIAO

CERTIFICATE IN INTRODUCTORY RIVER ENHANCEMENT (APPLIED)

Student Workbook

Kōnae Ako 4 – *Māramatanga*

Ingoa:

STUDENT WORKBOOK

Pūniu River Care Inc © 2022

Copyright notice

This course material is provided for educational purposes. You may not copy or distribute any part of this material to any other person and may print it, in full or in part, only for your own use. You may not make any other copy/s for any other purpose. Failure to comply with the terms of this warning may expose you to legal action for copyright infringement and/or disciplinary action.

Disclaimer

The information in this publication is not intended as a substitute for professional advice. Pūniu River Care expressly disclaims all liability to any person/organisation arising directly or indirectly from the use of or reliance on, or for any errors or omissions in, the information in this publication, including any references to third parties. Whilst efforts have been made by Pūniu River Care to ensure the accuracy of the information provided, the adoption and application of this information is at the reader's discretion and is his or her sole responsibility.

Student use of reference materials

Where you are directed to third party copyright works, whether on the internet or elsewhere, please check the work's copyright notice (or license) to ensure that you are not breaching copyright in the work. Note that you have a statutory right of fair dealing for research or private student, see s 43 of the Copyright Act 1994.

STUDENT WORKBOOK

PEPEHA

Mōkau ki runga, Tāmaki ki raro

Pare Waikato, Pare Hauraki

Te Kaokaoroa o Pātetere

Mangatoatoa ki waenganui

Ā muri i a au

Kia mau tonu ki tēnā

Kia mau ki te kāwau mārō

Whanake ake, Whanake ake!

E kore au e mate

He kākano i ruia mai i Rangiātea

Mai te wāhi ngaro ki te mata o te whenua

Ko au te maunga, ko te maunga ko au

Ko au te moana, ko te moana ko au

Ko au te ngahere, ko te ngahere ko au

Ko au te awa, ko te awa ko au

He kaitiaki tūturu ahau arā Te Kāhui ā Hiwa

Tihei Mauriora!

STUDENT WORKBOOK

THE NAME: TE AUKAIAO

The name of the programme Te Aukaiao was given to this kaupapa by Paraone Gloyne.

'Te au' refers to the current in any body of water. In this case, the current of the Pūniu river and all the other smaller streams and waterways that lead to the Pūniu river.

Similarly, each individual person also has a current flowing within them and as kaitiaki, we have an obligation to care for and contribute to the mauri of our waterways. Our individual mauri combines with that of the river to bring and sustain life to the individual, the river and the wider taiao landscape.

'Kaiao' is another word for ora (living) and together the name encapsulates the kaupapa of this programme and represents the interdependence of kaitiaki and taiao alike.

STUDENT WORKBOOK

NGĀ UARA

Tupu te kākano
Tupu te taketake
Tupu te pihinga
Tupu te māhuri
Tupu te rākau
Ko au ko koe, ko koe ko au
Tihei Mauriora



Koha – *Limitless generosity acknowledging the celebration of life*

Is about celebrating life, acknowledging life and being grateful for the opportunities that arise. To Pūniu River Care it is to give without receiving, to contribute with endless generosity and to nurture all that is life.

Mauri – *Boosting a new life force into a sustainable world*

Kākano – literal translation is seed. This can also mean a provider of new growth. We are also trying to clean up our rivers and our waterways. Water is life, or a life force and we as people, and everything breathing has a life force. It is an interdependent relationship that affords mutual respect.



Whanaungatanga – *Strategic relationships and empowering whānau*

Pihinga are seedlings and as seedlings come into the world, with it comes a colony of whatever species they are. As we grow as people we find ourselves surrounded by whānau and then we find more whānau. We find new relationships and make new friends and before we know it, we find ourselves in partnerships we might never have thought possible.

Māramatanga – *To know your place in a sustainable world*

Māhuri is a young tree at an adolescent stage of life. This is a stage of life where youth are trying to find themselves and where they think they can contribute to life. We also need to figure out some things in life and in what we do to be sure of why we do what we do and understand the significance of what you do in life is also understood by those in and around your circle.



Rangatiratanga – *Self-determined to take the lead for a sustainable world*

Rākau is the fully established tree that has stood its ground from the humble seed. A giant kauri tree that stands in awe is a sight of pride and power and has an establishment of control and self-governance. For people to become and feel the same as this rākau will only know that feeling when a challenge in front of them has been met to the best of their ability. Whether it be buying food for the cupboards to buying their own home. Having a sense of ownership, knowing and understanding who you are and where you fit in this world by being self-governed will give you a sense of rangatiratanga.

Kaitiakitanga – *Keepers of our waterways, rivers, whānau and home*

Taketake – is the root of all things growing. For the life of a tree to thrive, it needs a good root system and needs to be carefully nurtured from inception. This can also be reflected within the homes of where if we want the best for our younger ones, we must ensure they are grounded first and with the right caring and nurturing we can ensure they will strive to be all they can be in a safe and healthy upbringing. We also do what we need to do to ensure we lead by example and show we can be guardians of our waterways, our families and homes.



STUDENT WORKBOOK

TABLE OF CONTENTS

PEPEHA.....	3
THE NAME - TE AUKAIAO	4
NGĀ UARA.....	5
PROGRAMME INFORMATION.....	7
KŌNAE AKO 4 – MĀRAMATANGA.....	8
SPECIES IDENTIFIED FOR THIS PROGRAMME	10
KŌNAE AKO 4 – ASSESSMENT.....	11
KŌNAE AKO 4 – ASSESSMENT OBSERVATION CHECKLIST	12
KŌNAE AKO 4 – SITE PREPARATION CHECKLIST	13
HE AHA TĒNEI PUKAMAHI? – WHAT IS THIS WORKBOOK?	14
NGĀ TOHUTOHU MŌ TĒNEI PUKAMAHI – WHAT TO DO WITH THIS WORKBOOK.....	14
NGĀ TOHU ĀWHINA – HELPFUL ICONS.....	14
HE PAPA KUPU – GLOSSARY.....	15
ĒTAHI ATU RAUEMI – SUPPORTING RESOURCES.....	17
NGĀ KAUPAPA AKO – MĀRAMATANGA (PREPARING TO PLANT).....	18
1. KARAKIA WHAKARITE	19
HEI TAUIRA – AN EXAMPLE.....	19
HEI MAHI – ACTIVITY.....	19
2. PŪRĀKAU	20
HEI TAUIRA – AN EXAMPLE.....	20
HEI MAHI – ACTIVITY.....	20
3. MIHIMIHI	21
HEI TAUIRA – AN EXAMPLE.....	21
HEI MAHI – ACTIVITY.....	21
4. MARAMATAKA.....	23
HEI TAUIRA – AN EXAMPLE.....	23
HEI MAHI – ACTIVITY.....	23
5. SUSTAINABLE KAITIAKITANGA PRACTICES	24
HEI TAUIRA – AN EXAMPLE.....	24
HEI MAHI – ACTIVITY.....	24
6. WEED IDENTIFICATION WHEN PREPARING A PLANTING SITE.....	25
HEI TAUIRA – AN EXAMPLE.....	25
HEI MAHI – ACTIVITY.....	25
7. SITE PREPARATION TECHNIQUES WHEN PREPARING A PLANTING SITE.....	26
HEI TAUIRA – AN EXAMPLE.....	26
HEI MAHI – ACTIVITY.....	26
8. USING RELEVANT TOOLS AND EQUIPMENT.....	27
HEI TAUIRA – AN EXAMPLE.....	27
HEI MAHI – ACTIVITY.....	27
9. WETLAND AND RIPARIAN ZONES WHEN PREPARING A PLANTING SITE.....	28
HEI TAUIRA – AN EXAMPLE.....	28
HEI MAHI – ACTIVITY.....	28
10. RELEVANT DOCUMENTS WHEN PREPARING A PLANTING SITE.....	29
HEI TAUIRA – AN EXAMPLE.....	29
HEI MAHI – ACTIVITY.....	29
TE WHAKARĀPOPOTONGA – A SUMMARY.....	30

STUDENT WORKBOOK

PROGRAMME INFORMATION

Programme Name	Te Aukaiao - Certificate in Introductory River Enhancement (Applied)			
Level	4			
Credits	120			
Length	36 weeks			
Total hours	Teaching hours (on the job)	800 hours	Self-directed hours	400 hours
Graduate profile outcome statement	A graduate of this programme will be able to: Be a Pūniu River Care Kaitiaki that is: • Humble and respectful • Professional and reputable • Connected to the taiao • Strong in their identity • Competent in their mahi as an individual and as a team player Be a Pūniu River Care Kaitiaki that knows relevant: • Tikanga practices • Maramataka knowledge • Kaitiakitanga practices • Sustainable taiao practices Be a Pūniu River Care Kaitiaki that can [do]: • Apply knowledge of seed collection processes from a taiao worldview. • Apply knowledge of seed sowing processes from a taiao worldview • Apply knowledge of potting up processes from a taiao worldview • Apply knowledge of preparing planting sites from a taiao worldview • Apply knowledge of planting processes from a taiao worldview • Apply knowledge of maintaining plant processes from a taiao worldview.			
Programme outcome statement	At the end of this programme, graduates will be able to: 1. Demonstrate broad operational and technical knowledge in a values based planting approach towards a rākau Māori industry. 2. Select and apply relevant solutions to various stages of the planting process. 3. Select and apply relevant processes specific to Pūniu River Care that is relevant to the planting process. 4. Select and apply a range of communication skills relevant to the rākau Māori industry.			

STUDENT WORKBOOK

KŌNAE AKO 4 – MĀRAMATANGA

Programme Name	Te Aukaiao - Certificate in Introductory River Enhancement (Applied)			
Kōnae Ako name	Māramatanga			
Level	4			
Credits	20			
Length	6 weeks			
Total hours	Teaching hours (on the job)	150 hours	Self-directed hours	50 hours
Overview (aim)	The value of māramatanga represents knowing your place in a sustainable world. Māhuri is a young tree at an adolescent stage of life. This is a stage of life where youth are trying to find themselves and where they think they can contribute to life. We also need to figure out some things in life and in what we do to be sure of why we do what we do and understand the significance of what you do in life is also understood by those in and around your circle. In alignment with this description, this kōnae ako aims to examine and implement the preparing to plant process using tikanga practices within a taiao worldview.			
Learning Outcomes	At the end of this kōnae ako, students will be able to: 1. Demonstrate tikanga practices when preparing planting sites (Range includes karakia, whakarite, pūrākau, mihimihi). 2. Demonstrate maramataka knowledge when preparing planting sites (Range: phase, atua, month, and impacts on hinengaro, tinana, tāngata and taiao). 3. Select and apply kaitiakitanga practices when preparing planting sites (Range: using animals to graze the site prior to planting rather than chemicals, understanding the threats (weeds), target of weeds only, determining the best way to prepare the site, use of carbon copy spray diary). 4. Demonstrate weed identification knowledge when preparing planting sites (Range: chemical and manual application, Grow Safe). 5. Implement site preparation techniques when preparing planting sites (Range: site preparation (manual - scrub bar/chainsaw and chemical spraying) and site access (farm etiquette, respecting landowners, reading terrain) 6. Demonstrate competency to use relevant tools and equipment when preparing planting sites (Range: PPE, scrub bar, chainsaw, 4WD, chemical and manual application (Grow Safe), Grubber, Spade, Spray Pack, Cut and Paste). 7. Demonstrate knowledge of wetland and riparian zones when preparing planting sites (Range: wetland (Kahikatea, Whanake, Mānuka) and riparian (Karamū, Whanake, Mānuka, Tarata), whanaungatanga of plants between zones). 8. Demonstrate knowledge to complete relevant documents when preparing planting sites (Range: Hazard identification, spray diaries, incident reporting)			

STUDENT WORKBOOK

Graduate Profile Outcomes	Graduates of this programme will be able to: • Apply knowledge of tikanga practices to promote a taiao worldview. • Apply knowledge of the maramataka to enhance practice and production. • Implement kaitiakitanga practices to care for and maintain plants and people. • Implement sustainable practices to promote a taiao worldview. • Apply knowledge of preparing to plant processes from a taiao worldview.
Kōnae ako content	This kōnae ako will cover the following topics: • Tikanga (Karakia, whakarite, pūrākau, mihimihi) • Maramataka practices • Kaitiakitanga practices • Weed identification • Site preparation • Tool and equipment competency • Wetland and riparian zones • Relevant documentation
Resources	The maramataka section of this kōnae ako is to be completed in conjunction with the Matataio-ra Maramataka app.
Internal requirements	The following are required in this kōnae ako: • UTV • Tool use • Gun and Hose
External requirements/licences	The following are required in this kōnae ako: • 4WD • Grow Safe certification
Special notes	The species used throughout this programme are: 1. Mānuka / Tea tree (<i>Leptospermum scoparium</i>) 2. Kahikatea / NZ White Pine (<i>Dacrycarpus dacrydioides</i>) 3. Karamū (<i>Coprosma robusta</i>) 4. Whanake / Cabbage tree (<i>Cordyline australis</i>) 5. Tarata / Lemonwood (<i>Pittosporum eugenioides</i>)

STUDENT WORKBOOK

SPECIES IDENTIFIED FOR THIS PROGRAMME¹



Mānuka
(*Leptospermum scoparium*)

The many uses of Mānuka in rongoā is due to its strong anti-microbial properties and as a natural antiseptic, it is an ideal healer and protector for the body.



Kahikatea
(*Dacrycarpus dacrydioides*)

The Kahikatea is the oldest member of the ancient Podocarp family and have been around for more than 160 million years.



Karamū
(*Coprosma robusta*)

It is a sacred plant to Māori and a branch of the Karamū was often used by tohunga when conducting a karakia over a sick person.



Whanake
(*Cordyline australis*)

All the parts of the Whanake have important uses such as food, fibre and medicine. The root, stem and top are all edible, a good source of starch and sugar.



Tarata
(*Pittosporum eugenioides*)

Tarata was used to make perfume and hair oils. The gummy resin that oozes from the bark was mixed with bird fat and the Tītoki and Kōhia and rubbed over the hair and body.

STUDENT WORKBOOK

KŌNAE AKO 4 – ASSESSMENT

Assessment overview	The assessment for this kōnae ako will be a combination of written and practical activities. Learning outcome 1 and 2 will be assessed and evidenced through the Student Workbook. Learning outcomes 3 – 8 will be assessed and evidenced through the Assessment Observation Checklist.
Learning Outcomes	At the end of this kōnae ako, students will be able to: 1. Demonstrate tikanga practices when preparing planting sites (Range includes karakia, whakarite, pūrākau, mihimihi). 2. Demonstrate maramataka knowledge when preparing planting sites (Range: phase, atua, month, and impacts on hinengaro, tinana, tāngata and taiao). 3. Select and apply sustainable kaitiakitanga practices when preparing planting sites (Range: using animals to graze the site prior to planting rather than chemicals, understanding the threats (weeds), target of weeds only, determining the best way to prepare the site, use of carbon copy spray diary). 4. Demonstrate weed identification knowledge when preparing planting sites (Range: chemical and manual application, Grow Safe). 5. Implement site preparation techniques when preparing planting sites (Range: site preparation (manual - scrub bar/chainsaw and chemical spraying) and site access (farm etiquette, respecting landowners, reading terrain) 6. Demonstrate competency to use relevant tools and equipment when preparing planting sites (Range: PPE, scrub bar, chainsaw, 4WD, chemical and manual application (Grow Safe), Grubber, Spade, Spray Pack, Cut and Paste). 7. Demonstrate knowledge of wetland and riparian zones when preparing planting sites (Range: wetland (Kahikatea, Whanake, Mānuka) and riparian (Karamū, Whanake, Mānuka, Tarata), whanaungatanga of plants between zones). 8. Demonstrate knowledge to complete relevant documents when preparing planting sites (Range: Hazard identification, spray diaries, incident reporting)
Assessment evidence	The evidence of assessment for this kōnae ako is: 1. Student Workbook completed by the student 2. Assessment observation checklist completed by Assessor

STUDENT WORKBOOK

KŌNAE AKO 4 – ASSESSMENT OBSERVATION CHECKLIST

Student name			
Assessor name			
Assessment date(s)			
Assessment activity			
		ACH	YTA
Learning outcomes	1. Demonstrate tikanga practices when preparing planting sites (Range includes karakia, whakarite, pūrākau, mihimihi).	☐	☐
	2. Demonstrate maramataka knowledge when preparing planting sites (Range: phase, atua, month, and impacts on hinengaro, tinana, tāngata and taiao).	☐	☐
	3. Select and apply sustainable kaitiakitanga practices when preparing planting sites (Range: using animals to graze the site prior to planting rather than chemicals, understanding the threats (weeds), target of weeds only, determining the best way to prepare the site, use of carbon copy spray diary).	☐	☐
	4. Demonstrate weed identification knowledge when preparing planting sites (Range: chemical and manual application, Grow Safe).	☐	☐
	5. Implement site preparation techniques when preparing planting sites (Range: site preparation (manual - scrub bar/chainsaw and chemical spraying) and site access (farm etiquette, respecting landowners, reading terrain)	☐	☐
	6. Demonstrate competency to use relevant tools and equipment when preparing planting sites (Range: PPE, scrub bar, chainsaw, 4WD, chemical and manual application (Grow Safe), Grubber, Spade, Spray Pack, Cut and Paste).	☐	☐
	7. Demonstrate knowledge of wetland and riparian zones when preparing planting sites (Range: wetland (Kahikatea, Whanake, Mānuka) and riparian (Karamū, Whanake, Mānuka, Tarata), whanaungatanga of plants between zones).	☐	☐
	8. Demonstrate knowledge to complete relevant documents when preparing planting sites (Range: Hazard identification, spray diaries, incident reporting)	☐	☐
Final result (ACH or YTA)		☐	☐
Assessor signature and final date assessed			

STUDENT WORKBOOK

HE AHA TĒNEI PUKAMAHI? – WHAT IS THIS WORKBOOK?

This workbook can help support and guide you through your mahi for this programme. This workbook contains:

- Additional information to support what you have learnt with your kaiako and your class.
- Some activities to help you consolidate your learning.
- Some key words (and their meanings) to help you through your journey.
- Ideas of additional resources to help you along the way.

NGĀ TOHUTOHU MŌ TĒNEI PUKAMAHI – WHAT TO DO WITH THIS WORKBOOK

- 1) Look at what you have learnt during this kōnae ako and the assessment material.
- 2) Work through each exercise of this workbook – it is a support tool for you. You can make notes in it, highlight important ideas and things you want to make special note of.
- 3) Have a think about how particular activities relate to your mahi at Pūniu River Care to help understand its significance.

NGĀ TOHU ĀWHINA – HELPFUL ICONS

The following section explains several helpful icons that you will see throughout this workbook to help navigate and guide you through this workbook.

	He kupu āwhina – <i>Some tips to help you work through an activity.</i>
	He mahi takitahi – <i>An individual activity.</i>
	He mahi pānui – <i>A reading activity.</i>
	He mahi whakarongo – <i>A listening activity.</i>
	He mahi tuhituhi – <i>A writing activity.</i>
	He mahi titiro/mātakitaki – <i>A observation activity.</i>
	He mahi arotake – <i>A reflection activity within your journal.</i>
	Ētahi atu rauemi – <i>Additional resources.</i>

STUDENT WORKBOOK

HE PAPA KUPU – GLOSSARY

This glossary contains Māori words and their meanings that are found through this workbook.

Māori word/phrase	English translation
Awa	<i>River</i>
Ētahi rauemi	<i>Some (additional) resources</i>
He kupu āwhina	<i>Tips - Some tips to help you work through an activity</i>
He mahi pānui	<i>A reading activity</i>
He mahi takitahi	<i>An individual activity</i>
He mahi titiro/mātakitaki	<i>A looking/watching activity</i>
He mahi whakarongo	<i>A listening activity</i>
Hei mahi	<i>Activity</i>
Hei tauira	<i>An example/an introduction</i>
He papa kupu	<i>Glossary</i>
Hinengaro	<i>Mind</i>
Ingoa	<i>Name</i>
Iwi	<i>Tribe</i>
Kaiako	<i>Teacher</i>
Kaitiakitanga	<i>The keeping of our waterways, rivers, whānau and home</i>
Kākano	<i>Seed</i>
Karakia	<i>Ritual chant, prayer</i>
Kaupapa ako	<i>Learning topic</i>
Koha	<i>Limitless generosity acknowledging the celebration of life</i>
Kōnae ako	<i>Module</i>
Mahuri	<i>A young tree at an adolescent stage of life</i>
Marae	<i>Traditional meeting place/complex</i>
Maramataka Māori	<i>Māori lunar calendar</i>
Māramatanga	<i>To know your place in a sustainable world</i>
Maunga	<i>Mountain</i>
Mihimihi	<i>To greet, pay tribute</i>
Papatūānuku	<i>Earth mother</i>
Pepeha	<i>An introduction of yourself using physical landmarks to share where you are from/who you are</i>
Pihinga	<i>Seedlings</i>
Pukamahi	<i>Workbook</i>
Pūrākau	<i>Story</i>
Rākau	<i>Tree</i>
Rangatiratanga	<i>Self-determination; to take the lead for a sustainable world</i>
Taiao	<i>Natural world/environment/outdoor activities</i>
Taketake	<i>The root of all things growing</i>
Tāngata	<i>In this context it means energy level²</i>
Taniwha	<i>Guardian</i>
Tapu	<i>Sacred</i>
Te whakarāpopototanga	<i>The summary</i>
Tikanga practices	<i>Practices using Māori customs/values/worldview</i>
Tinana	<i>Body/physical wellbeing</i>
Uara	<i>Values</i>
Waka	<i>Canoe</i>
Whakarite	<i>To prepare</i>
Whānau	<i>Family</i>
Whanaungatanga	<i>Strategic relationships and empowering whānau</i>

² Explanation given in Matataiora app

STUDENT WORKBOOK



STUDENT WORKBOOK



ĒTAHI ATU RAUEMI – SUPPORTING RESOURCES

Videos:

Land, Air, Water Aotearoa - <https://www.youtube.com/watch?v=lwJGpFIJ9mc>

Momentum Waikato - <https://vimeo.com/300860022>

Pūniu River Care, Sustainable enterprises - <https://www.youtube.com/watch?v=3htUhFvIHog>

Pūniu River Care, Waterway restoration project - https://www.youtube.com/watch?v=-jjdaQ_xSnw

Pūniu River Care, Growing jobs back home - https://www.youtube.com/watch?v=X_onB47mATO

Pūniu River Care, Freshwater Improvement Fund - <https://www.youtube.com/watch?v=8WpR5Fwdoks>

Pūniu River Care, Waikato River Authority - <https://www.youtube.com/watch?v=S0YpgaSve8Y>

Pūniu River Care, Hikoi May 2021 - <https://www.youtube.com/watch?v=h9ldZrcrCTE>

Waikato Tainui, Taiao Grant - <https://www.youtube.com/watch?v=lcGRGH-Rx-0>

Waikato BFEA Catchment Group Award - <https://www.youtube.com/watch?v=VTGT9giVg0c>

Matataiora Maramataka app by Maniapoto Māori Trust Board - <https://www.youtube.com/watch?v=zNki9cyqjKw>

(Available to download from Google Play or Apple Store).

Waiata:

Ehara i te mea: <https://www.youtube.com/watch?v=ujluANcY3fE>

E tū Maniapoto: https://www.youtube.com/watch?v=_ho7ANdEhEQ (@ 3:48)

Haere mai ki Maniapoto: https://www.youtube.com/watch?v=_ho7ANdEhEQ (@1:16)

He aha kei taku uma: <https://www.youtube.com/watch?v=bY9EISgYbrg>

Hoki hoki tonu mai: https://www.youtube.com/watch?v=_CL0-JJmclK

Mangatoatoa: https://www.youtube.com/watch?v=W_00w3hY3wg (@0:00 - 0:51)

Mā wai rā: <https://www.youtube.com/watch?v=FRXjYJxYLCc>

Rimu rimu: <https://www.youtube.com/watch?v=hSCq3FIEQa0>

Tai aroha: <https://www.youtube.com/watch?v=awVVAaEILFw>

Tōia: https://www.youtube.com/watch?v=aZS_B8ZtIEo

Whakataurangi ake: <https://www.youtube.com/watch?v=n8uN4l3MkNs>

STUDENT WORKBOOK



NGĀ KAUPAPA AKO – MĀRAMATANGA (*PREPARING TO PLANT*)

The value of māramatanga represents knowing your place in a sustainable world. Māhuri is a young tree at an adolescent stage of life. This is a stage of life where youth are trying to find themselves and where they think they can contribute to life. We also need to figure out some things in life and in what we do to be sure of why we do what we do and understand the significance of what you do in life is also understood by those in and around your circle.

In alignment with this description, this kōnae ako aims to examine and implement the preparing to plant process using tikanga practices within a taiao worldview.

- Tikanga (Karakia, whakarite, pūrākau, mihimihi)
- Maramataka practices
- Kaitiakitanga practices
- Weed identification
- Site preparation
- Tool and equipment competency
- Wetland and riparian zones
- Relevant documentation



1. WHAKARITE



Whakarite are often used to prepare people and places to ensure a positive outcome. These are generally used to start and close occasions as well as blessing food. In general, the intention of whakarite is to prepare someone for what needs to be done and keep them safe and well.

Below is an example

Whakataka te hau ki te uru
Whakataka te hau ki te tonga
Kia mākinakina ki uta
Kia mātaratara ki tai
E hī ake ana te atakura
He tio, he huka, he hau hū
Tihei mauri ora.



HEI MAHI – ACTIVITY

Using what you know now, write another whakarite below that you would use when preparing a planting site.

This image shows a single sheet of white paper with horizontal blue ruling lines. The lines are evenly spaced and run across the width of the page. There is a small, light blue tab or piece of tape attached to the top right corner of the paper. The background behind the paper is dark grey.

STUDENT WORKBOOK

2. PŪRĀKAU

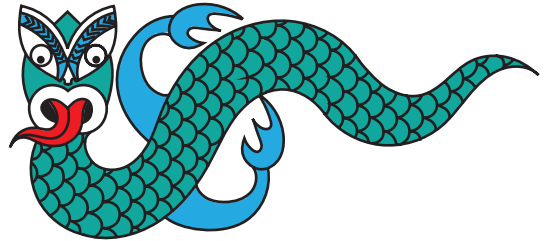


HEI TAUIRA – AN EXAMPLE

Pūrākau are a way to capture stories of our whānau, hapū and iwi. These stories talk of our ancestors' successes, failures, lessons and history. Pūrākau are often used to teach younger generations about the significance of places and people in those stories. Below is the pūrākau of Rangikakake as told by Paraone Gloyne of Raukawa ki Wharepūhanga.

*"Whirowhiro ana riporipo ana te au o Pūniu,
wai kaukau o Peketahi.
Ka tiitiro whakarunga ki Ōtautahanga ki te ana o
Takerepiripiri e mōwai mai rā.
Teretere taku tia rere
Hūkere hūkere kauria hei
Hūkere hūkere kauria hā
Kauria te ia o te awa tuku whakarite (Pūniu)
Tū mai rā Kakepuku,
te rerenga o Mukukai (he taniwha) ki te tonga
Auē te aroha e (ki te tonga)
Waiwaiā paenga rau whakatau mai rā
Ko te kārohirohi e tere mai rā
Tō ata i te kahu roa o Waipā
I ō parārī i Rangitoto
Teretere taku tia rere
Hūkere hūkere kauria hei
Hūkere hūkere kauria hā
Puawhe a Whanawhana pōwhiritia
Ka tiitiro whakararo ki Kāwhia
Kei waho ko Raparoa puku kumara
Taku tai one ko te hauāuru
Papaki te moana ki Taramainuku
I Te Mānukanuka
Ko Kaiwhare riri Whakauka
Rangikakake e koro haere mai rā."³*

This is an excerpt of a waiata composed by Paraone Gloyne, Ngahuia Kopa and Te Aorere Tunoho which celebrates the taniwha who are the guardians of Pūniu, Waipā and Waikato rivers. Rangikakake in particular is known throughout Raukawa as a taniwha within their waterways. This is the story of Rangikakake.



Rangikakake

Rangikakake is the taniwha who resides in the Waipapa, Whakamaru and Maraetai areas and is a well-known as a guardian of those waterways. It is also said that Rangikakake was the pet taniwha of Raukawa the ancestor⁴.

Waipapa is a kāinga site and was one of the traditional Raukawa boundary markers. The hapū of Ngāti Wairangi, Ngāti Moe, Ngāti Parekawa, and Ngāti Te Kohera lived in the area. They had cultivations, and set eel pā in the river⁵.

The hapū of the Whakamaru area were Ngāti Moekino, Ngāti Whāita and Ngāti Wairangi-Parewhete. Whakamaru is a shortening of the name Te Whakamarumarutanga o Kahukeke named by Rakataura for his wife Kahukeke⁶.

The descendants of Upokoiti, Wairangi and Whāita lived within the Maraetai area. The hapū are Ngāti Whāita and Ngāti Poroaha (also known as Ngāti Poroahi). Ngāti Whāita had cultivations on the land that is now Lake Maraetai at Wairere, Opukera, Motuhauhi, Taiamoe and Te Ruahoko⁷.

Having an understanding of the connectedness of these hapū and the waterways gives kaitiaki a deeper understanding of the importance of these taniwha and the role they play in caring for the awa.



HEI MAHI – ACTIVITY

After reading the pūrākau of Rangikakake, what are 3 lessons you would take from it and use in your everyday practice?

- 1 _____
- 2 _____
- 3 _____

³ Excerpt taken from composition "Teretere Taku Tia Rere" by Paraone Gloyne, Ngahuia Kopa and Te Aorere Tunoho.

⁴ Shared by Paraone Gloyne.

⁵ <https://www.govt.nz/assets/Documents/OTS/Raukawa/Raukawa-Deed-of-Settlement-Documents-2-June-2012.pdf>

⁶ <https://www.waikatoregion.govt.nz/assets/WRC/Council/Policy-and-Plans/RPS-Regional-Policy-Statement/RPSv2018.pdf>

⁷ <https://www.waikatoregion.govt.nz/assets/WRC/Council/Policy-and-Plans/RPS-Regional-Policy-Statement/RPSv2018.pdf>

STUDENT WORKBOOK

3. MIHIMIHI



HEI TAUIRA – AN EXAMPLE

A mihihi is a greeting or introduction that happens at the start of a meeting or gathering. A mihihi is used to establish links between the speaker and the audience and the kaupapa of the gathering and may include a pepeha.

Below is an example of a mihihi.

Pepeha

Taku ara rā, ko Tūrongo⁸
I waewaea ki te Tairāwhiti
Ko Mahinārangī, ko te rua rā i moe ai a Raukawa
He kāwei tautika mai ki ahau

My path is Tūrongo
Who went to the east
And Mahinārangī in whose womb
Raukawa slept
A line direct to myself



HEI MAHI – ACTIVITY

Using the space provided, write your pepeha from your māmā and pāpā and five PRC whakatauki (from the tikanga book).

	Ko.....waka
	Ko.....maunga
	Ko.....awa
	Ko.....marae
	Ko.....iwi
	Ko.....te/ngā rangatira
	Ko.....tōku māmā

⁸ <https://rauakawa.org.nz/about-our-iwi/>

STUDENT WORKBOOK

	Ko.....waka
	Ko.....maunga
	Ko.....awa
	Ko.....marae
	Ko.....iwi
	Ko.....te/ngā rangatira
	Ko.....tōku pāpā

Whakatauki

PRC Whakatauki	Meaning

STUDENT WORKBOOK

4. MARAMATAKA



HEI TAUIRA – AN EXAMPLE

The Māori lunar calendar called the Maramataka marks the phases of the moon in a lunar month. The maramataka was once used for almost any activity taking place in the community. Some days or nights of the maramataka were better to do certain activities than other days.



HEI MAHI – ACTIVITY

Using the Matataiora Maramataka app, complete the following table for today's date and write the impact of today's phase on preparing a planting site.

	Date ⁹	
	Atua (Deity)	
	Maramataka (Month)	
	Hinengaro (Mindfulness)	
	Tinana (Physical wellbeing)	
	Tāngata (Energy level)	
	Taiao (Outdoor activities)	
	How does today's phase impact on preparing a planting site?	

⁹ The translations given here are from the Matataiora app.

STUDENT WORKBOOK

5. SUSTAINABLE KAITIAKITANGA PRACTICES



HEI TAUIRA – AN EXAMPLE

Sustainability and kaitiakitanga are complementary when working in the taiao space. Kaitiakitanga practices allow efficiency and also respect Papatūānuku when working with the land.



HEI MAHI – ACTIVITY

Using the table below, describe what each kaitiakitanga practice means when preparing a planting site.

Using animals to graze the site prior to planting rather than chemicals	
Understanding the threats (weeds)	
Target of weeds only	
Determining the best way to prepare the site	
Use of carbon copy spray diary	

STUDENT WORKBOOK

6. WEED IDENTIFICATION WHEN PREPARING A PLANTING SITE



HEI TAUIRA – AN EXAMPLE

Weed identification is just one of the steps in the process of preparing a planting site but is important to first prepare the whenua for the next step.



HEI MAHI – ACTIVITY

Using the table below write down what you know about the weed identification topics below.

Chemical and manual application <i>(What do you need to consider when identifying weeds?)</i>	
Grow Safe <i>(How is this relevant to weed identification?)</i>	



STUDENT WORKBOOK

7. SITE PREPARATION TECHNIQUES WHEN PREPARING A PLANTING SITE



HEI TAUIRA – AN EXAMPLE

There are a number of activities and techniques involved when preparing a planting site.



HEI MAHI – ACTIVITY

When preparing a site for planting, use the table below to write down what you did (or observed) in each of the below areas.

Site preparation (manual – scrub bar/chainsaw)	
Site preparation (chemical and manual preparation)	
Site access (farm etiquette)	
Site access (respecting landowners)	
Site access (reading terrain)	



STUDENT WORKBOOK

8. USING RELEVANT TOOLS AND EQUIPMENT



HEI TAUIRA – AN EXAMPLE

Appropriate and safe use of relevant tools and equipment when preparing a planting site makes the best use of time and resources but also improves the safety of all involved.



HEI MAHI – ACTIVITY

Think about how tools and equipment were used in the previous task and use the table below to write down how each tool or piece of equipment was used. If it wasn't used, why wasn't it used?

PPE	
Scrub bar	
Chainsaw	
4WD	
Chemical application	
Grubber	
Spade	
Spray pack	
Cut and paste	

STUDENT WORKBOOK

9. WETLAND AND RIPARIAN ZONES WHEN PREPARING A PLANTING SITE



HEI TAUIRA – AN EXAMPLE

Wetland and riparian zones are a part of the landscape and require specific consideration when preparing planting sites.



HEI MAHI – ACTIVITY

Using the table below, what do you need to consider when preparing a planting site for wetland and riparian zones.

Wetland	
Riparian	
Whanaungatanga of plants between zones	



STUDENT WORKBOOK

10. RELEVANT DOCUMENTS WHEN PREPARING A PLANTING SITE



HEI TAUIRA – AN EXAMPLE

Completing the relevant documents keeps a record of activities and resources and it also helps with planning, monitoring and assessing areas of the programme.



HEI MAHI – ACTIVITY

Using the activities you have completed in this kōnae ako, use the table below to describe what each of the below documents are for and why completing these is important.

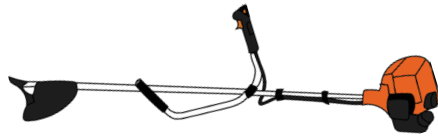
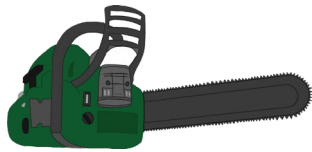
Documents	What is it for and why is it important?
Hazard Identification	
Spray diaries	
Incident reporting	

STUDENT WORKBOOK

A light blue spiral graphic is positioned on the right side of the page, starting from a small circle and winding outwards. The background is white with horizontal lines.

STUDENT WORKBOOK

TE WHAKARĀPOPOTONGA – A SUMMARY



What do I need to organise for site preparation?

Scrub bar
Chainsaw
Chemical and manual spraying

Farm etiquette
Respect landowners
Read the terrain

What do we need to remember to access the site?

MĀRAMATANGA

What mahi are we doing today?

I should probably add to the hazard list too

Do we have everything we need?
Spade?
Grubber?
Spray pack?

I must report that incident in the UTV today





PŪNUI
RIVER
CARE INC.