

# Inanga

## Te aromatawai i te nōhanga toene



Kotahi anake te whai wāhi o te nuinga o ngā inanga uwaha ki te toene. Ki te kitea e ia he nōhanga toene tino kounga ko te tikanga e 80% o aua hua ka ora, ā, ka tīmata tō rātau puta hei kaeaea – engari ki te kore e kitea he nōhanga tino kounga ka mate katoa pea ngā kaeaea.

### Nōhanga toene tawhito

I te wā i nohohia a Aotearoa e te Pākehā, ko ngā māheuheu i ngā tāhuna i ngā wāhi toene inanga i whakaawetia e ngā tai tērā pea he ngahere teitei whakamarumarū, mauwha hoki (hei tauira, kōwhai (*Sophora spp.*), patē (*Schefflera digitata*), manatu (*Plagianthus regius*), kahikatea (*Podocarpus dacrydioides*), me te tī kouka (*Cordyline australis*), me ngā momo wī roroa (hei tauira, harakeke (*Phormium tenax*), ngā momo mātā (*Carex secta*, *C. virgata*), me te wīwī (*Juncus edgariae*)).

I whakamarutia, i taumarutia hoki e ēnei uru rākau ngā tāhuna, me te hāpai i ngā uru māheuheu o ngā momo toetoe, ngā otaota me ngā pūkohukohu.

I roto i ngā uru pakiaka o ēnei momo toetoe, otaota, me ngā tipu maha hāngai, i toene ngā inanga.

### Nōhanga toene hou

Ko te nuinga o ngā rohe tāhuna i Aotearoa, me ō rātau wāhi toene inanga hāngai, kei te pokea e ngā otaota tauhou maha.

Kei te rite te piri o ngā hua inanga ki te pouaka roa (*Schedonorus phoenix*) me te creeping bent (*Agrostis stolonifera*) me te Yorkshire fog (*Holcus lanatus*), ā, ko te tikanga he iti rawa ake ngā rahinga.

Ko ngā otaota tauhou e hiahiatia ana hei wāhi toene ko te korowa (*Trifolium spp.*), monkey musk (*Mimulus guttatus*) me te kawariki (*Rununculus sp.*), engari kāore e tino pokea e ēnei tipu te kohinga tipu tāhuna.

## ME PĒHEA TĀU AKE AROMATAWAI I TE NŌHANGA PAI

Mēnā kei te kimi koe i ngā wāhi toene tūturu, te whakarite rānei ki te whakauru i ētahi nōhanga toene rangitahi, he mea nui te mōhio ki te mea e kimihia ana e koe.

I ngā whārangi e rua e whai ake ka kite koe i tētahi 'puka aromatawai nōhanga toene o ngā inanga' hei āwhina i a koe me tēnei mahi. Kia kotahi te puka aromatawai mō ia wāhi.

Ina whakakāia e koe ngā kōrero o tō wāhi i runga, he aratohu kei reira hei āwhina i a koe ki te aromatawai i tō wāhi. He kōrero mō ngā whakaritenga huanga rerekē tekau mā rua me te āwhina i a koe ki te tuku tohutohu mō te āhua onāianei o tō wāhi.



Kei te tautokona te Kaupapa Mātauranga Toene Inanga ā-Motu e...



AQUATIC SCIENCE & VISUAL COMMUNICATION



# Pepa aromatawai nōhanga toene inanga

Rā: \_\_\_\_\_ Wā: \_\_\_\_\_ Tangata: \_\_\_\_\_

Whakahaere (hei taurira, ingoa kura, aha atu, aha atu.): \_\_\_\_\_

Ingoa awa: \_\_\_\_\_ Parenga awa (porohitatia tētahi): **matau pono**<sup>1</sup> / **maui pono**<sup>1</sup>

Wāhi i te awa: (tohua he wāhi pūmau i te awa hei tūtohu wāhi pūmau, hei taurira, he piriti)

**Whakarunga / whakararo** (porohitatia tētahi) ko te pito o te wāhi he \_\_\_\_\_ mita,  
**whakarunga / whakararo** (porohitatia tētahi) o te (ingoa o te tūtohu wāhi) \_\_\_\_\_

Ngā taunga GPS whakararo: Raki: \_\_\_\_\_ Rāwhiti: \_\_\_\_\_

Roa o te rangahau (mita): \_\_\_\_\_

- Rārangi arowhai i mua i te tīmatanga:
- Kua arotakehia e au ngā mōrea katoa o te wāhi me te whakarite i ngā take haiora me te haumaruru
  - Kua tirohia e au ngā raruraru urunga wai tai/ika i raro
  - Kei roto au i 'te wāhi ai' (arā, te whānui o te toene) mō tēnei awa<sup>2</sup>
  - Kei te mōhio au ki te 'tohu wai teitei' i taku wāhi<sup>2</sup>
  - Kei te arotake au i te wāhi i te wā tika o te tau<sup>2</sup> (arā, i te wā toene)

Kei roto taku wāhi i te (porohitatia tētahi):  
**wāhi taiao / wāhi taiwhenua / wāhi tāone / tētahi atu** (whakamāramahia) \_\_\_\_\_

AROMATAWAI NŌHANGA (tohua kia KOTAHI te māka mō ia take rārangi, arā, he 0, 5, 10 māka rānei – ka tuhi ai i te māka ki te tiwai i te taha matau)

Tatau: →	0 māka = KĀORE E PAI	5 māka = ĀHUA PAI	10 māka = PAI	Ō māka: tuhia ia māka huanga ki konei
<b>Ngā huanga:</b> ↓	kāore i te pai mō te toene, ki te toene kāore e ora ngā hua	ka toene engari mēnā ka whakapaihia ka piki te toene me te ora o ngā hua	He pai te toene me te ora o ngā hua	↓
<b>urunga mō ngā ika</b> <i>Tirohia te awa i waenga i tō wāhi toene me te moana kia mōhio mēnā kei te aukatia te piki whakarunga o ngā inanga</i>	ngā kēti tai, ngā ahuriri, ētahi atu ārai nui e aukati ana i te piki whakarunga o te inanga	he karawata iti, he wāhanga o tētahi kōawa paipa, he kēti tai kei te āhua huaki rānei	kāore he ārai	
<b>urunga wai tai</b> <i>Tirohia te awa i waenga i tō wāhi toene me te moana kia mōhio mēnā kei te aukatia te piki whakarunga o te wai tai.</i>	ngā kēti tai, ngā ahuriri, ētahi atu aukati nui i te wai tai	he karawata iti, he wāhanga o tētahi kōawa paipa, he kēti tai kei te āhua huaki rānei	kāore he ārai	
<b>koki parenga</b> <i>Tangohia te koki parenga toharite mō te tahei 1 m te whānui e kapi ai te tohu tai teka teitei. Whakatakotohia he pou/rūri kotahi mita te roa ki te papa (kia hāngai te takoto ki te taha o te wai) ka ine i tō koki mai i tērā. Tohua he wāhi i roto i tō wāhi toene e hāngai ana, tuhia rānei ngā ine maha ka tuhi mai i tētahi toharite mai i ērā.</i>	iti ake i te koki 7° TĒRĀ RĀNEI neke atu i te koki 35°	i waenga i te 21–35° te koki	i waenga i te 7–20° te koki	

<sup>1</sup> Te taha mauī me te matau ina titiro whakararo.

...kei te whārangi whai ake...

<sup>2</sup> Tirohia te pepa whakamārama 'Inanga - Te rapu i ngā wāhi toene tūturu mō ētahi atu kōrero.

AROMATAWAI NŌHANGA (tohua kia KOTAHI te māka mō ia take rārangi, arā, he 0, 5, 10 māka rānei – ka tuhi ai i te māka ki te tiwai i te taha matau)

Tatau →	0 māka = KĀORE E PAI	5 māka = PAI	10 māka = PAI	Ō māka: tuhia ia māka huanga ki konei ↓
<b>Ngā huanga:</b> ↓	kāore i te pai mō te toene, ki te toene kāore e ora ngā hua	ka toene engari mēnā ka whakapaihia ka piki te toene me te ora o ngā hua	He pai te toene me te ora o ngā hua	
<b>papanga tāhuna</b> He āha te papanga NUI rawa (pararopi-kore) o te parenga? Aromatawaihia tēnei mā te tāhei 1 m te whānui e kapi ai te tohu tai nui.	ngā toka tōkau maha, ngā kōhatu pāwhati, tuakirikiri, kirikiri, paru, raima, rākau rānei	he oneone te nuinga, engari he nui atu ngā mea kei roto	he oneone	
<b>taumarumarū māheuheu</b> E hia te nui o te papa kua kapi i te māheuheu (arā, e hia te nui o te papa e hunaia ana e ngā tipu e tipu ana). Aromatawaihia tēnei mā te tāhei 1 m te whānui e kapi ai te tohu tai nui.	Iti ake i te 50%	i waenga i te 50–75%	nui atu i te 75%	
<b>teitei o ngā māheuheu</b> Tangohia te toharite o te māheuheu matua/NUI i te wāhi. Waiho ngā uru tipu tū motuhake o ngā māheuheu nui ake. Aromatawaihia tēnei mā te tāhei 1 m te whānui e kapi ai te tohu tai nui. Inea atu ki runga o te wāhi e pau haere nei ngā tipu, arā, kua e aro ki ngā kauru tāroaroa ake.	iti ake i te 10 cm (he poto rawa ngā tipu, ā, kāore e taea te whakahaukū i te papa) neke atu i te 50 cm (ko te tikanga he nui rawa ngā tipu mō te nōhanga toene)	i waenga i te 10–20 cm	i waenga i te 21–50 cm	
<b>momo māheuheu</b> Tipakohia te momo māheuheu NUI i taua tāhei. Aromatawaihia tēnei mā te tāhei 1 m te whānui e kapi ai te tohu tai nui.	ngā tipu rākau nui (ngā rākau, kōti, parakipere, mauwha), tiwha, amiami	raupō, harakeke, pūrekireki	karāhe/wiwī ko ngā momo pai ake mō te toene ko ngā pouaka roa (Schedonorus phoenix), karāhe kōtuke (Agrostis stolonifera), me te pūrekireki Edgar (Juncus edgariae)	
<b>mātotoru o te whāriki pakiaka</b> Whakamahia ō ringa ki te wehewehe i ngā māheuheu kia kite atu ai koe i te papa. E hia te mātotoru o ngā māheuheu me ngā pakiaka i te papa? Aromatawaihia tēnei mā te tāhei 1 m te whānui e kapi ai te tohu tai nui.	He tino māmā te wehewehe i te māheuheu, kāore he pakiaka kua puta ki runga ake i te papa, he iti te kiato o ngā tātā o ngā tipu, kei te kitea ētahi wāhanga o te papa i mua i tō kumekume i ngā tipu.	Ina timata koe ki te kume- kume mai i ngā tātā tipu ka kitea e koe te oneone. (arā, he iti te kapinga o ngā whāriki pakiaka i te papa)	He uaua te kumekume i ngā māheuheu. He nui ngā pakiaka/tātā i te papa. (arā, he uaua te tae ki te oneone i raro i ngā whāriki pakiaka)	
<b>haukū o te papa</b> Tirohia te whenua i te take o ngā māheuheu kia kitea te kaha o te haukū. Aromatawaihia tēnei mā te tāhei 1 m te whānui e kapi ai te tohu tai nui.	tino maroke, puehu hoki	maroke i ētahi wāhi	haukū, mākū rānei	
<b>taumarumarū mō ngā ika</b> Hūhū ai ngā ika pakeke i mua i te wā toene, ā, kia nui tonu ngā taumarumarū hei tiaki i ngā ika mai i ngā kaikonihī tūturu. Tirohia te wāhi i waenga i tō tāhei 1 m, ā, ki raro atu ki te wai i te parenga. He māheuheu kei reira e tipu ana, he tipu rānei kei te tauwharewhare i ngā parenga, ngā poro rākau nui, toka nui rānei kei te wai hei tāwharau i ngā ika pakeke?		KĀORE he taumarumarū mā ngā ika, KOTAHI anake rānei o tētahi e whai ake: – ngā tipu roa ka puta i te tai pari – ngā tipu nui e tauwhare- whare ana i te wai – ngā tipu wai kei rō wai – ngā rākau, ngā toka nui rānei roto i te wai	Kia RUA o ēnei i te iti rawa: – ngā tipu roa ka puta i te tai teitei – ngā tipu nui e tauwhare- whare ana i te wai – ngā tipu wai kei rō wai – ngā rākau, ngā toka nui rānei kei roto i te wai	
<b>tiaki i te parenga</b> Kei te tapahia auautia ngā tāhuna kia poto ai ngā karāhe i ngā wā katoa i tō wāhi toene?	kei te tapahia auautia ngā parenga, ā, kei te poto ngā karāhe		itiiti noa te tapahia o ngā parenga, ka tapahia i te 2 marama i mua o te wā toene o te inanga	
<b>te ārai kararehe (mō ngā wāhi taiwhenua anake)</b> Kei te taiapatia tō wāhi toene hei ārai i te urunga mai o ngā kararehe?	Kāore he taiapa; ka uru noa ngā kararehe ki ngā parenga. Kua mahue ngā tohu tūkinō o nā tata nei mai i te urunga o ngā kararehe.	He taiapa rangitahi kua whakatūhia, engari ehara i te mea tūturu (arā, he waea hiko, pou rangitahi rānei) TĒRĀ RĀNEI he taiapa kei reira engari kua tūkinohia, he kēti kei te huaki e uru atu ai ngā kararehe ki te wāhi (ka uru atu ngā kararehe)	He taiapa pūmau e ārai ana i te urunga o ngā kararehe ki te wāhi i ngā wā katoa. Kua mahue ngā tohu tūkinō o nā tata nei mai i te urunga o ngā kararehe.	

TATAUHIA Ō MĀKA HUANGA KATOA MAI I NGĀ WHĀRANGI E RUA KI KONEI →

- E tohu ana ngā tataau 90–120 he pai te wāhi nōhanga mō te toene!
- E tohu ana ngā tataau 55–90 he āhua pai te nōhanga toene, engari ka pai ake mēnā ka whakapaihia.
- Mēnā he 0 mō TĒTAHI o ngā huanga KĀORE PEA e toene – me whakapaipai.