

Te pātai	Ngā aromatawai a te pouako
1. He aha ētahi whiriwhiringa e toru mō te maha o ngā kapu me te rōrahi o te unu ki ia kapu?	
2. Mēnā 125mL te rōrahi ka tāhorongia ki ia kapu, e hia ngā kapu ka taea te whakakī?	
3. He aha te hautanga o te wai ārani me te wai māori ki ia kapu?	
4. Mēnā e hiahia ana a Niwa ki te whakaranu i te 9L o te unu, he pēhea nei te rōrahi o te wai ārani me te rōrahi o te wai māori hei whakaranu māna? E whai ana ia kia pērā tonu te kaha o te ārani o te unu.	
5. Mēnā ka whakaranua te 300mL wai ārani me te 1.5L wai māori, he kaha ake, he ōrite, he ngoikore ake rānei te hā o te ārani?	

Te Whakaranu Wai Ārani

Tūārere	1			2			3	
Tau	1	2	3	4	5	6	7	8

Tohu Ako: Te Tau, Ngā Whakahau
Kaupapa: Te hautau, te ōwehenga me te pānga riterite

Hei whakamārama

He tauira ngohe tēnei, hei aromatawai i te mōhio o te ākonga ki te hautau, te ōwehenga me te pānga riterite. Mā te āta mātakitaki me te āta whakarongo a te pouako ki te mahi a te ākonga, e mōhiohia ai te taumata o te ākonga, ngā wāhi e pakari ana, me ngā wāhi hei whakapakari ake.

I ētahi wā, mā te whakawhitiwhiti kōrero, mā te paku whakamārama rānei a te pouako, e kite ai te ākonga i te rautaki, i te huarahi rānei hei whakaoti i te ngohe.

E tika ana kia taunga te ākonga ki tēnei mea te whakaoti rapanga, te wetewete i ngā kōrero me ngā tohutohu, te āta whakaaro i te rautaki e hāngai ana, me te tūhonohono anō i ngā maramara mātauranga kei roto i tōna hinengaro. Koirā te āhua o tēnei ngohe aromatawai.

Me tuku kia mahia tēnei ngohe aromatawai i muri i ngā akoranga e hāngai ana ki te hautau, te ōwehenga me te pānga riterite, kava e tuku mātao noa iho.

Rauemi Tautoko:

Kei te whare whakaputu rauemi o Te Tāhuhu o te Mātauranga ēnei rauemi (Down the Back of the Chair), kei te whata rauemi tuihono hoki o Tāhūrangi.

- *Te Poutama Tau, Pukapuka Tuarua: Te Uiui Aromatawai.* Ko ngā kōrero whānui e pā ana ki te aromatawai pāngarau.
- *Te Poutama Tau, Pukapuka Tuawhitu: Te Hautau, te Tau ā-Ira me te Ōrau.* Ko ngā huatau matua me ētahi ngohe whakaako e hāngai ana ki te hautau.

Ngā tohutohu

Whakaaturia te kāri, ākene pea me pānui tahi me te ākonga, kia mārama ai ngā kōrero.

Hoatu he wā hei whakaoti mā te ākonga i ngā pātai.

Tonoa te ākonga kia whakamārama i āna mahi. Tāruatia ‘Te Whārangi Aromatawai mā te Pouako’, hei tuhi māu i āna whakamārama, me ō whakaaro, ō whakataunga aromatawai.

Āta tirohia ngā kōrero kei te whārangi ‘Hei Ārahi i te Aromatawai’ hei āwhina i a koe ki te whakatau i te taumata e hāngai ana ki ngā mahi a te ākonga. Kei tēnei whārangi te ngako o te pāngarau e hāngai ana ki tēnei ngohe, me ngā tauira whakamārama a ngā ākonga.

Me mātua mōhio te ākonga

- ki te whiriwhiri hautanga
- ki te whiriwhiri ōwehenga
- ki te whakawhiti waeine ngahuru (mL ↔ L)
- ki ngā rautaki wāwāhi tau mō te whakawehe

Ngā kupu pāngarau e hāngai ana

hautanga, L, mL, rōrahi

Ngā kupu e hāngai ana ki te horopaki

hā, kukū, tāhoro, wai ārani, wai māori, whakaranu

Ngā rauemi

- te kāri ngohe

Ētahi ngohe whakaako e hāngai ana

Te Poutama Tau: Pukapuka Tuaono

- Te Pānga Riterite hei Whakaoti Whakawehenga
- Hākari

Te Poutama Tau: Pukapuka Tuawhitu

- Pēke Kākano
- Ranunga Peita
- Ranunga Peita Hikohiko

He tauira pātai hei kukume whakaaro

- Whakamāramahia ngā mahi i oti i a koe i tō hinengaro. He aha tō mahi tuatahi? He aha tō mahi tuarua?
- He aha koe i whiriwhiri ai i tēnā i te tuatahi?
- E mōhio ana koe ki tētahi atu rautaki e hāngai ana ki tēnā pātai?
- Me pēhea te whakatau tata i te otinga?

Hei Ārahi i te Aromatawai

Te pātai	Kaupae 6 (Mahere Tau), Tau 6	Kaupae 7 (Mahere Tau), Tau 7	Kaupae 8 (Mahere Tau), Tau 8
1. He aha ētahi whiriwhiringa e toru mō te maha o ngā kapu me te rōrahi o te unu ki ia kapu?	Ka whakamahia te tāpiri tāruarua hei whiriwhiri i ētahi tauwehe o te 2, o te 2,000 rānei. Hei tauira: • $0.5 + 0.5 + 0.5 + 0.5 = 2$ (e 4 ngā kapu, 0.5L te rōrahi) • $400 + 400 + 400 + 400 + 400 = 2,000$ (e 5 ngā kapu, e 400mL te rōrahi)	Ka whakamahia ngā meka mōhio hei whiriwhiri i ētahi tauwehe o te 2, o te 2,000 rānei. Hei tauira: • $4 \times 5 = 20$, nō reira, $0.4 \times 5 = 2$ (e 5 ngā kapu, 0.4L te rōrahi) • $2 \times 10 = 20$, nō reira, $200 \times 10 = 2,000$ (10 ngā kapu, e 200mL te rōrahi)	Ka whakamahia ngā meka mōhio me te whakaaro pānga riterite hei whiriwhiri i ētahi tauwehe o te 2, o te 2,000 rānei. Hei tauira: • $5 \times 4 = 20$, nō reira, $2.5 \times 8 = 20$, nō reira, $250 \times 8 = 2,000$ (e 8 ngā kapu, e 250mL te rōrahi)
2. Mēnā 125mL te rōrahi ka tāhorangia ki ia kapu, e hia ngā kapu ka taea te whakakī?	Ka whakamahia te tāpiri tāruarua, te rearua rānei. Hei tauira: $125 + 125 = 250$, $250 + 250 = 500$, $500 + 500 = 1,000$, $1,000 + 1,000 = 2,000$. Nō reira, 16 ngā kapu, 125mL te rōrahi.	Ka whakamahia te rearua me ngā meka mōhio. Hei tauira: $125 + 125 = 250$, $250 + 250 = 500$, $500 \times 4 = 2,000$. Nō reira, 16 ngā kapu, 125mL te rōrahi.	Ka whakamahia te rearua me ngā meka mōhio, me te whakaaro pānga riterite. Hei tauira: $2,000 \div 125 \rightarrow 4,000 \div 250 \div 250 \rightarrow 8,000 \div 500 \rightarrow 80 \div 5 = 16$
3. He aha te hautanga o te wai ārani me te wai māori ki ia kapu?	Ka hurihia te 2L hei ritamano (2,000mL), ka hurihia rānei te 400mL hei rita (0.4L). Ka whakamahia te tāpiri tāruarua hei whiriwhiri i te hautanga. Hei tauira: $400 + 400 + 400 + 400 + 400 = 2,000$, nō reira, ko te 400mL he rite ki te $\frac{1}{5}$ o te 2L. Ko te $\frac{1}{5}$ te hautanga o te wai ārani. E mōhio ana ki te $\frac{2}{5} = 1$, nō reira, e $\frac{4}{5}$ te hautanga o te wai māori.	Ka hurihia te 2L hei ritamano (2,000mL), ka hurihia rānei te 400mL hei rita (0.4L). Ka whakamahia te whakaaro pānga riterite hei kimi hautanga ōrite. Hei tauira: • $\frac{400}{2,000} = \frac{200}{1,000} = 0.2, \frac{1}{5}$ rānei • E mōhio ana ki te $\frac{2}{5} = 1$, te $0.2 + 0.8 = 1$ rānei, nō reira, e $\frac{4}{5}$ te hautanga o te wai māori, ko te 0.8 rānei.	
4. Mēnā e hiahia ana a Niwa ki te whakaranu i te 9L o te unu, he pēhea nei te rōrahi o te wai ārani me te rōrahi o te wai māori hei whakaranu mānā? E whai ana ia kia pērā tonu te kaha o te ārani o te unu.		Ka whakamahia te hautanga me te whakarea, te whakawehe rānei. Hei tauira: • $\frac{1}{3}$ te hautanga o te wai ārani: • $\frac{1}{3}$ o te $9 = 9 \div 3 = 1\frac{4}{3}$ L • $\frac{1}{3} \times 9 = \frac{2}{3} + \frac{4}{3} = 1\frac{4}{3}$ L Ka whakaoti tangohanga hei whiriwhiri i te rōrahi wai māori: $9 - 1\frac{4}{3} = 7\frac{1}{3}$ L	Ka whakamahia te whakaaro pānga riterite hei whiriwhiri i te ōwehenga ōrite. Hei tauira: $400\text{mL} \rightarrow 2\text{L}$, nō reira, $200\text{mL} \rightarrow 1\text{L}$, nō reira, $1,800\text{mL} \rightarrow 9\text{L}$ (wai ārani) Ka whakaoti tangohanga hei whiriwhiri i te rōrahi wai māori: • $9 - 1.8 = 7.2\text{L}$ • $9,000 - 1,800 = 7,200\text{mL}$
5. Mēnā ka whakaranua te 300mL wai ārani me te 1.5L wai māori, he kaha ake, he ōrite, he ngoikore ake rānei te hā o te ārani?			Ka whakamahia te whakaaro pānga riterite hei whakatairite ōwehenga. Hei tauira: • $300:1,500 = 1:5$ $400:1,600 = 1:4$ Nō reira, he ngoikore ake te hā o te ārani (nā te rahi ake o te wai māori) • $\frac{300}{1,800} = \frac{1}{6}$ te hautanga wai ārani • $\frac{400}{2,000} = \frac{1}{5}$ te hautanga wai ārani He nui ake te $\frac{1}{5}$ i te $\frac{1}{6}$, nō reira, he ngoikore ake te hā o te ārani.

Te Whakaranu Wai Ārani