



He Tikanga Tapatoru

Te kaupapa: Te Āhuahanga o te Tapatoru Hāngai, Waerite hoki

Te whenu: Te Āhuahanga: Taumata 2–5

Hei whakamārama

He tauira ngohe tēnei, hei aromatawai i te mōhio o te ākonga ki te āhuahanga o te tapatoru hāngai, waerite hoki. Mā te āta mātakitaki me te āta whakarongo a te pouako ki te mahi a te ākonga, e mōhiotia 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 āhuahanga o te tapatoru hāngai, waerite hoki, kaua e tuku mātao noa iho.

Kei ēnei pukapuka ētahi kōrero hei āwhina i te pouako:

- Te Pukapuka Tuarua o Te Poutama Tau **Te Uiui Aromatawai**. Ko ngā kōrero whānui e pā ana ki te aromatawai pāngarau.
- **Whanaketanga Pāngarau: He Aratohu mā te Pouako**. Ko ngā kōrero me ētahi tauira ngohe e hāngai ana ki ngā Whanaketanga Pāngarau.
- **Hei Tautoko i te Marautanga Pāngarau: Te Ine**. Ko ngā huatau matua mō tēnei mea te ine.
- **Hei Tautoko i te Marautanga Pāngarau: Te Hanga**. Ko ngā huatau matua mō tēnei mea te hanga.

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. Whakaahuangia ‘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 te otinga 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 āhuahanga o te tapatoru hāngai
- ki te āhuahanga o te tapatoru waerite
- ki te whakamahi i te rūri hei ine i te roa ki te mitamano (mm) e pātata ana
- ki te whiriwhiri hoahoa āwhata
- ki te whiriwhiri panoni (nekenga, hurihanga, whakarahinga)
- ki ngā rautaki wāwāhi tau e hāngai ana hei whiriwhiri hautanga, whakareatanga hoki
- ki te whakamahi tātaitai mēnā he uava rawa ngā tau e whiriwhiria ana
- ki te whiriwhiri i te horahanga o te tapatoru

Ngā kupu pāngarau e hāngai ana

āwhata, horahanga, huri, koki hāngai, neke, tapa, tapatoru hāngai, tapatoru waerite, tāroa, taurahi, whakarahi

Ngā rauemi

- te kāri ngohe
- te rūri mitamano (mm)
- te tātaitai

Ētahi ngohe whakaako e hāngai ana

Hei Tautoko i te Marautanga Pāngarau: Te Ine

He Ngohe Whakaako i te Ine:

- Te Horahanga Tapatoru (wh.90)
- Te Whiriwhiri Koki (wh.99)

Hei Tautoko i te Marautanga Pāngarau: Te Hanga

He Ngohe Whakaako i te Hanga:

- Te Whakamārama Āhua (wh.55)
- Te Hanga Āhua (wh.56)
- He Ōrite te Āhua 1 (wh.72)
- He Ōrite te Āhua 2 (wh.74)
- He Ōwehenga Tapa (wh.80)
- Te Whakarahi Āhua me te Horahanga (wh.82)
- Ngā Koki Roto o te Tapatoru (wh.84)
- Hoahoa Āwhata (wh.89)

He tauira pātai hei kukume whakaaro

- Whakamāramahia ngā mahi i oti i a koe i roto i tō hinengaro. He aha tō mahi tuatahi? He aha tō mahi tuarua?
- He aha koe i whiriwhiri ai i te haurua o te 12 i te tuatahi?
- E mōhio ana koe ki tētahi atu rautaki hei whakaoti i tēnā pātai?

Te pātai	He tauira whakautu a te ākonga me te taumata whanaketanga e tohua ana
<p>Tuhia ngā kōrero katoa ka taea e koe mō ngā tapatoru e rua nei.</p> <p>E ilika ana kia tonoa te ākonga kia whakamārama i āna kōrero. Hei tauira:</p> <p>He tapatoru waerite nā te mea he ōrite te roa o ngā tapa po e rua, ā, he ōrite ēnei koki e rua.</p> <p>Mēnā ka mahue i te ākonga ētahi o ngā kōrero, e pai ana te tuku pātai hei whakaputa māna i tōna māhiotanga. Hei tauira:</p> <ul style="list-style-type: none"> Me pēhea te whiriwhiri i te roa o ngā tapa o ngā tapatoru tūturu? Kei te mōhio koe me pēhea te whiriwhiri i te horahanga o te tapatoru? He aha ngā panoni e tau ai te tapatoru mauī ki runga i te tapatoru matau? 	<ul style="list-style-type: none"> He tapatoru waerite. 2a→ He tapatoru hāngai. 2a→ He ōrite te āhua o ngā tapatoru e rua. 2e→ He whakarāhinga tētahi i tētahi. 2e→ E 45° te rahi o ētahi koki e rua o ia tapatoru. 3a→ E toru ngā panoni e tau ai te tapatoru mauī ki te tapatoru matau, arā: hurihanga kōaro 90°, nekehanga whakatematau, whakarāhinga (taurahi = 0.75). 4a→ E 4cm te roa o ngā tapa po e te tapatoru mauī (mā te ine, 2a→), he rite ki te 4.8m tūturu. 4a→ E pātata ana ki te 5.6cm te tāroa o te tapatoru mauī (mā te ine, 2a→), he rite ki te 6.72m tūturu. 4a→ E 5.66cm te tāroa o te tapatoru mauī (mā te ture a Pythagoras, kia 2 ngā mati ā-ira), he rite ki te 6.79m tūturu. 5a→ E 3cm te roa o ngā tapa po e te tapatoru matau (mā te ine, 2a→), he rite ki te 3.6m tūturu. 4a→ E pātata ana ki te 4.2cm te tāroa o te tapatoru matau (mā te ine, 2a→), he rite ki te 5m tūturu. 4a→ E 4.24cm te tāroa o te tapatoru matau (mā te ture a Pythagoras, kia 2 ngā mati ā-ira), he rite ki te 5.09m tūturu. 5a→ Ko te horahanga o te tapatoru mauī: 4a→ tapatoru āwhata: $H = \frac{1}{2}p \times t$ $= \frac{1}{2} \times 4 \times 4$ $= 8\text{cm}^2$ tapatoru tūturu: $H = \frac{1}{2}p \times t$ $= \frac{1}{2} \times 4.8 \times 4.8$ $= 11.52\text{m}^2 \text{ (mā te tāitaitai)}$ Ko te horahanga o te tapatoru matau: tapatoru āwhata: $H = \frac{1}{2}p \times t$ $= \frac{1}{2} \times 3 \times 3$ $= 4.5\text{cm}^2$ tapatoru tūturu: $H = \frac{1}{2}p \times t$ $= \frac{1}{2} \times 3.6 \times 3.6$ $= 6.48\text{m}^2 \text{ (mā te tāitaitai)}$ Ko te 0.75 te taurahi hei whakaiti i te tapatoru mauī kia ōrite ki te tapatoru matau, arā, $4\text{cm} \times 0.75 = 3\text{cm}$. Nō reira, ko te $0.75^2 (= 0.5625)$ te taurahi kia ōrite te horahanga o te tapatoru mauī ki te horahanga o te tapatoru matau, arā, $8\text{cm} \times 0.5625 = 4.5\text{cm}^2$. 4a→

Te Whārangi Aromatawai mā te Pouako

He Tikanga Tapatoru: Taumata 2–5

Te pātai

Tuhia ngā kōrero katoa ka taea e koe mō ngā tapatoru e rua nei.

Ngā aromatawai a te pouako