



TE TĀHUHU O TE MĀTAURANGA

Ministry of Education

Hei Tautoko i te Marautanga Pāngarau

Te Poutama Tau

Pukapuka Tuatoru

Te Whakamahere

- 1 2 3 4 5 6 7 8



Hei Whakamahi

Ka mihi ake ki ngā pouako, ki ngā kaitakawaenga pāngarau, huri noa i te motu, e hāpai nei i ngā kaupapa maha e ora pai ai tō tātou reo rangatira, e eke ai ā tātou tamariki i ngā taumata o te mātauranga. Tēnā koutou i runga i te āhua o ngā whakahoki kōrero i ngā tau kua hori ake nei, hei whakawhanake i tēnei kaupapa a tātou, Te Poutama Tau. Mei kore ake koutou.

Ko ngā kōrero o roto i tēnei pukapuka i pūtakea mai i te pukapuka nei *Book 3, Getting Started*, i whakaputaina e Te Pou Taki Kōrero i te tau 2008. Otirā, he mea whakahou i runga i ngā whakahoki kōrero mai a te hunga e mahi mai ana i ngā kura reo Māori puta noa i te motu.

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Nā Te Tāhuhu o te Mātauranga ngā huruhuru tautoko hei whakaputa mā He Kupenga Hao i te Reo i tēnei pukapuka.
Kua rāhuitia ngā motika katoa kia āta whakaetia rā anō e te hunga kei a ia te mana tārua.



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Ngā Kōrero Whakataki

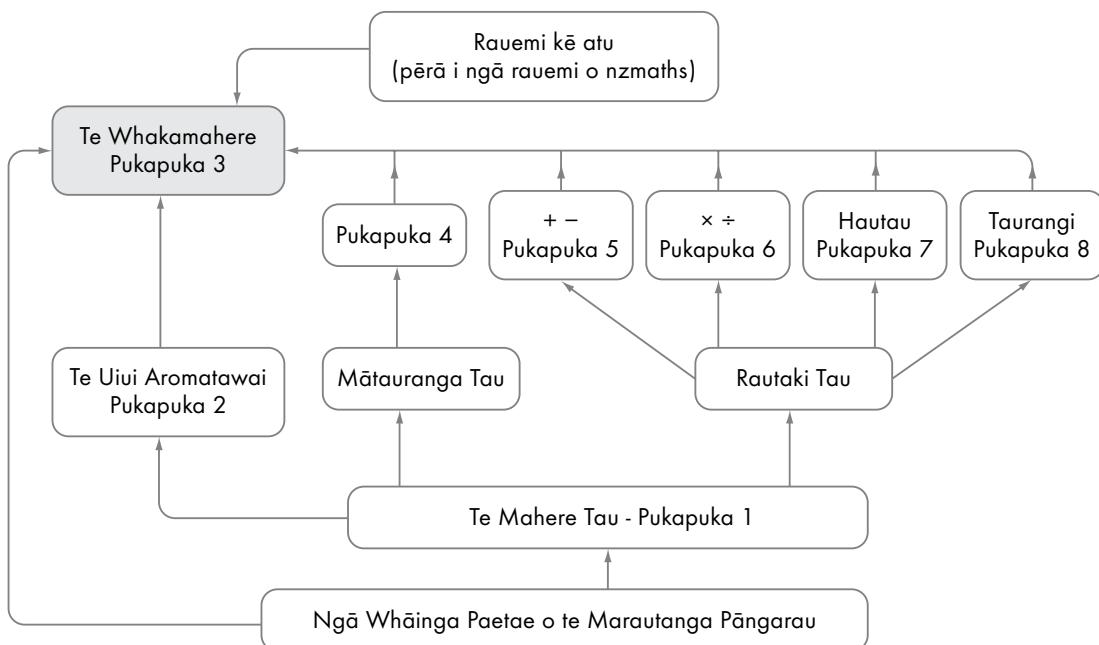
Ko Te Poutama Tau tētahi kaupapa hei āwhina i ngā pouako o roto i ngā kura reo Māori, ko te whakapiki i te mātauranga ngaiotanga e pā ana ki te whenu tau o Te Marautanga Pāngarau o Aotearoa te whāinga. Mā konei anō e kaha ai te ekenga taumata a ngā tamariki.

Koia nei te pukapuka tuatoru o roto i te kohinga pukapuka o Te Poutama Tau, ā, ko tāna, he āwhina i te pouako ki te whakamahere i ngā akoranga e hāngai ana ki tēnei whenu o te marautanga pāngarau, te tau. Hei āwhina atu anō pea ki te whakamahere i ērā atu o ngā whenu.

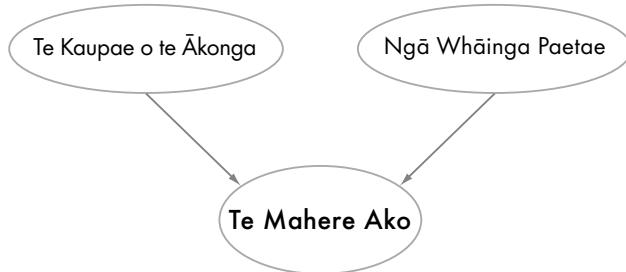
Ko te pouako tonu te tino tangata e angitu ai te ākonga i roto i ngā mahi pāngarau. E tutuki ai tana whakamahere i ngā akoranga pāngarau, he mea nui kia matatau te pouako ki ēnei āhuatanga:

- te mātauranga o roto i ngā tini wāhanga o te pāngarau;
- ngā āhuatanga ako o te tamaiti;
- ngā uauatanga ka pā ki te tamaiti;
- ngā mātāpono me ngā momo huarahi whakaako;
- te reo e hāngai ana ki te pāngarau, kia māmā, kia mārama, kia Māori tonu te āhua.

E tūhono ana tēnei pukapuka ki ērā atu o ngā pukapuka o Te Poutama Tau. Kei te pukapuka tuatahi te tūāpapa o te kaupapa, arā, Te Mahere Tau, e whakaatu ana i ngā kaupae hei pikitanga mā te tamaiti, he kaupae mātauranga tau, he kaupae rautaki tau, he kaupae reo anō hoki. Ko te tuarua o ngā pukapuka, koia te Uuii Aromatawai, kia mōhiotia ai kei tēhea o ngā kaupae te tamaiti e noho ana, ā, he aha hei ake māna ā muri iho. Ko ngā pukapuka whā ki te waru, he pukapuka whakaako, arā, kei reira ētahi ngohe hei whakaako i ngā wāhanga o roto i te Mahere Tau, arā, te mātauranga tau (Pukapuka 4), te tāpiri me te tango (Pukapuka 5) te whakarea me te whakawehi (Pukapuka 6), te hautau (Pukapuka 7) me te taurangi (Pukapuka 8).



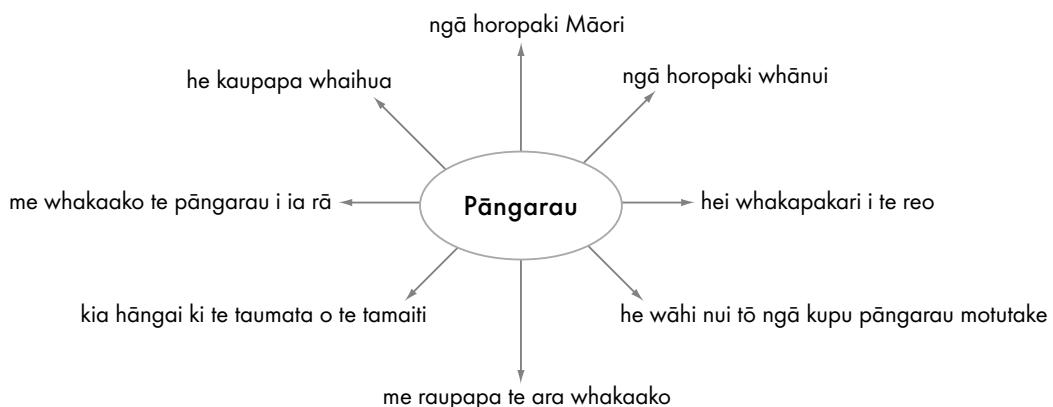
Nō reira, ko te wāhi hei tīmata i te whakamahere i te akoranga pāngarau, ko te kaupae tonu o te tamaiti. Mā te whakahere i te Uiui Aromatawai, mā te whakamahi i ngā Āpitihanga Uiui Rautaki, mā te aromatawai rānei a te pouako, e mōhiotia ai te kaupae o te tamaiti. Ka noho tēnei me ngā whāinga paetae o te marautanga pāngarau hei pūtake mō te whakamahere i ngā akoranga e hāngai ana ki te ākonga.



He Mātāpono mō te Whakamahere i te Pāngarau

I roto i te roanga atu o ngā tau e haere ana te kaupapa nei, Te Poutama Tau, koia nei ētahi o ngā āhuatanga kua puta, kia noho hei mātāpono mō te whakamahere i ngā akoranga pāngarau, hei whakaaroaro anō mā te hunga pouako:

- He kaupapa whaihua te pāngarau hei ako mā ā tātou tamariki. Mā te pāngarau e pakari ai te hinengaro, e tutuki ai ngā kaupapa maha o ia rā, e huaki anō ai ngā kūaha maha ki ngā tūranga mahi, ki ngā kaupapa ako anō hoki.
- He maha ngā whakamahinga o te pāngarau i roto i ngā horopaki Māori, i roto hoki i ngā horopaki o te ao whānui e noho nei ā tātou tamariki.
- He kaupapa whaihua anō te pāngarau hei ako i te reo Māori, hei whakapakari i te reo Māori.
- He wāhi nui tō ngā kupu motuhake o te pāngarau, e pakari ai te whakaaro pāngarau o te tamaiti. Nō reira, ko te reo matatini o te pāngarau tētahi āhuatanga hei whakamahere mā te pouako.
- E tika ana kia āta raupapahia te ara whakaako i te pāngarau. He tāpiripiri te ako i te pāngarau, arā, ko ngā akoranga o mua hei tūāpapa mō ngā akoranga o muri mai. Mā te whakamahere i te pāngarau e tika ai te raupapa, e hāngai anō ai ki te taumata o te tamaiti.
- Ko te pāngarau tētahi o ngā kaupapa matua o te kura, nō reira, e tika ana kia whakaakona i ia rā. Hei whakarāpopoto i ngā mātāpono:



Te Whakamahere i te Pāngarau: Ētahi Āhuatanga Matua

1. Kia hāngai tonu ki te ākonga.

- He mea nui te wairua whakawhanaunga kei waenganui i te pouako me te tamaiti, e hāpaitia ai tōna kiritau, kia whakapono ia ki a ia anō, kia māia, kia mauritau hoki ia ki āna mahi ako.
- Mā te aromatawai e mōhio ai te pouako ki te kaupae o Te Mahere Tau¹ e hāngai ana ki te tamaiti. He maha ngā momo aromatawai, pērā i te mātaki me te whakarongo tonu a te pouako i ia rā, ko te Uiui Aromatawai o Te Poutama Tau (Pukapuka 2), ko ngā Āpitihanga Uiui Rautaki me ngā Āpitihanga Whakamātautau Mātauranga kei runga i te pae tukutuku o www.nzmaths.co.nz.
- Mā te mōhio ki te kaupae o Te Mahere Tau e hāngai ana ki te ākonga, e tohua ai ngā āhuatanga hei ako tonu māna, haere ake nei, arā, ko ngā āhuatanga hei whakamahere mā te pouako.
- He whaihua tā te ākonga mahi tahi me ētahi o ana hoa. Mā konei e puāwai ai tōna reo me tōna āhei ki te whakawhitihiti whakaaro pāngarau.

2. Kia taurite te hōtaka whakaako i te pāngarau.

- Me āta whakaaro, me whakamahere anō hoki te wā e hāngai ana ki ia whenu o te marautanga. I ngā tau tōmua o te kura, kia nui te aro ki te whenu tau (e ai ki ētahi, ki te takiwā pea o te 50% ki te 70%). Ina pakeke haere te ākonga ka nui haere anō te aro ki ērā atu o ngā whenu. Ko te mea nui, ko te matatau o te ākonga ki te whenu tau hei āwhina i a ia i whenu kē.
- Me āta whakaaroaro te wāhi ki te mātauranga tau me ngā rautaki tau.
- Kia taurite hoki te āhua o ngā momo mahi whakaako. He wā mō te ako ā-kaka (pērā i te ako i ngā meka matua), he wā anō kia aro ki ngā rapanga me ngā momo rautaki whakaoti. He wā pea mō te whakaako i ngā tamariki katoa o te akomanga, he wā mō te whakaako ā-rōpū, he wā anō mō te whakaako i te tamaiti takitahi.
- Kia taurite te āhua o ngā momo rapanga hei whakaoti mā ngā ākonga – i ētahi wā, he rapanga kati, he wā anō he rapanga huaki.
- Me āta whakaaro ki ngā reo e rangona ana i ngā akoranga pāngarau, kia taurite te wāhi ki te reo whakamārama, te reo pātaitai o te ākonga, me te reo o te pouako.

3. Kia arotahi ki te reo matatini o te pāngarau.

- I mua i te akoranga me āta whakaaro e te pouako tōna reo whakaako, arā, me pēhea te whakairo i āna kupu, kia mārama, kia māmā, kia Māori tonu te takoto o te kupu.
- Me whakamahere ngā kupu pāngarau motuhake hei ako mā te ākonga, hei whakamahi, hei whakatauira anō mā te pouako i roto i āna kōrero.
- Me āta whakaaro te āhua o ngā pātai ka tukuna ki ngā ākonga, kia kaua e pāpaku noa iho ngā whiriwhiringa a te ākonga hei whakahoki i ngā pātai².

4. Kia tūhono atu te hōtaka pāngarau o te akomanga ki te hōtaka tonu a te kura.

- Kia rite tonu ngā kupu pāngarau motuhake e whakamahia ana ki tēnā akomanga, ki tēnā, kia pai ai te panuku o te ākonga, mai i tētahi akomanga ki tētahi.

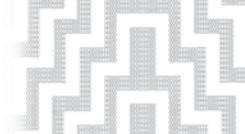
¹Tirohia te *Tē Poutama Tau, Pukapuka Tuatahi: Te Mahere Tau*, nā He Kupenga Hao i te Reo i whakaputa i te tau 2011.

²Tirohia te *Tē Reo Pāngarau: Putanga Tuarua*, te papakupu pāngarau i whakaputaina e He Kupenga Hao i te Reo i te tau 2010. Kei ngā whārangī 372 - 385 ētahi tauira o ngā taumata o ngā momo pātai.

- Me āta whakaaro kia rite tonu te āhua o te aromatawai i ngā ākonga ki tēnā akomanga, ki tēnā, pērā i te whakamahinga o te Uiui Aromatawai o Te Poutama Tau (tētahi rānei o ngā Āpitihanga Uiui Rautaki) i ētahi wā e rua i ia tau. Hei tauira anō, ko tā te kura pupuri i ngā kōrero aromatawai ki tētahi kōnae (ā-pepa, ā-rorohiko rānei) mō ia ākonga.
- Me āta whakatau e te kura ngā taumata hei whaitanga mā ia akomanga, hei ekenga mā ngā ākonga. Hei tauira pea, kia tae ake ki te Kaupae 5 (te tīmatanga o ngā rautaki wāwāhi tau) ngā ākonga katoa o te Tau 3.
- Ko te whakamahi rauemi (pērā i te poraka, te takatātai me te rārangī tau) tētahi āwhina nui kia mārama te ākonga ki ngā huatau pāngarau, nō reira, kia whai wāhi atu te whakamahi rauemi ki ngā hōtaka o ia akomanga, kia taunga ai te ākonga ki tēnei āhuatanga.

Hei whakarāpopoto i ēnei āhuatanga matua e whā o te whakamahere:





Wāhanga 1

Te Whakaako i te Mātauranga Tau me ngā Rautaki Tau



Kei te pukapuka tuatahi o Te Poutama Tau, arā, *Te Mahere Tau*, ngā whakamārama mō ēnei āhuatanga e rua nei, te mātauranga tau me ngā rautaki tau. Kei roto hoki i te marautanga pāngarau ūna whāinga paetae mō ēnei āhuatanga e rua.

Ko te mātauranga tau, koia ko ngā āhuatanga me pupuri ki roto i te pūmahara he māmā noa iho te tiki atu hei whakamahi mā te ākonga. Hei tauira, ko te tatau, ko ngā meka matua, ko te mōhio ki ngā tohu hautau. Kei roto i te Pukapuka Tuawhā ētahi ngohe hei whakapakari i te ākonga i ēnei āhuatanga o te mātauranga tau. I ētahi wā, ko te ‘ako ā-kākā’ te āhua o te whakaako e whāia ana, e pūmau ai te mātauranga tau ki te pūmahara o te ākonga. Ko te mea nui, ko te ako ā-kākā i **runga i te mārama ki te mea e ākona ana**. Hei tauira, mēnā e ako ā-kākā ana i ngā meka whakarea o te 4, me mōhio te ākonga ki:

- te tikanga o ngā whārite, pērā i te 4×5 , arā, e 5 ngā rōpū o te 4;
- te hononga o ngā meka whakareatanga o te 4 ki ngā meka whakareatanga o te 2.

Ko ngā rautaki tau, koia ko te whakamahi i ngā tikanga o te pūnaha tau hei whakaoti paheko, pērā i te tāpiri, te tango, te whakarea, me te whakawehe. Kei roto i ēnei pukapuka ētahi ngohe mō te whakaako rautaki:

- Pukapuka 5 – *Te Tāpiritanga, te Tangohanga me te Uara Tū*
- Pukapuka 6 – *Te Whakareatanga me te Whakawehenga*
- Pukapuka 7 – *Te Hautau, te Tau ā-Ira me te Ōrau*

Hei whakatauira i te rerekētanga o te mātauranga tau me te rautaki:

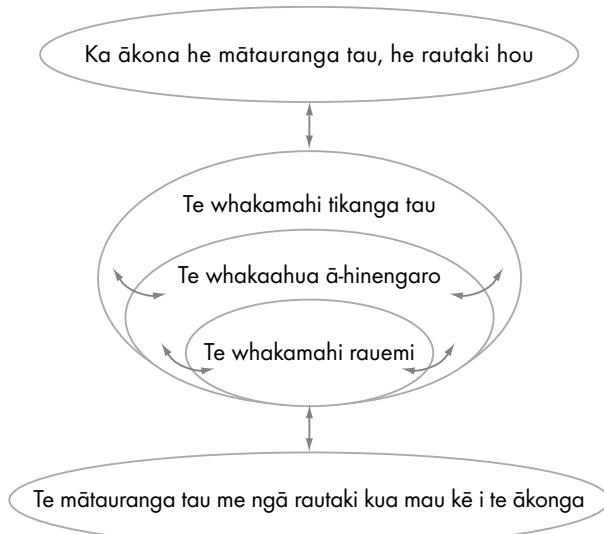
- $3 + 4$

I tua atu i te Kaupae 2 o Te Mahere Tau, he meka mātauranga tēnei e noho ana ki ūtātou pūmahara – kāore he whakamahinga o te hinengaro hei whakaputa i te otinga, arā, $3 + 4 = 7$.

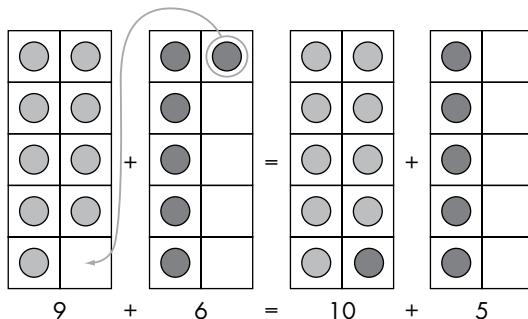
- $28 + 15$

Kāore te otinga o tēnei tāpiritanga e noho noa iho ana ki te pūmahara o te nuinga o tātou, nō reira, me whakamahi tētahi rautaki hei whakaputa i te otinga. Arā pea, ka huri ki te $30 + 13$, he māmā ināianei te whakaputa i te otinga $30 + 13 = 43$. Ko te ingoa o tēnei rautaki, ko ‘te tau māmā me te tikanga paremata’ (tirohia *Te Poutama Tau, Pukapuka Tuatahi: Te Mahere Tau*, kei reira ngā whakamārama mō te huhua o ngā momo rautaki).

E whai ana ngā pukapuka tua-5, tua-6, me te tua-7 i tētahi tauira mō te whakaako rautaki. E whakaaturia ana te tauira i konei:



Ko te mātauranga tau me ngā momo rautaki kua mau kē i te ākonga te pūtake o tēnei tauira whakaako, arā, ka tīmata i reira. Ko te whakamahi rauemi te hīkoi tuatahi. I konei, ka whakamahia he rauemi hei whakaoti rapanga, ā, he māmā te whakaatu, te whakamārama hoki i te rautaki e whakaakona ana. Hei tauira, ka whakamahia he anga tekau hei whakaoti i ngā tāpiritanga pērā i te $9 + 6$, e tino kitea ai te rautaki ‘te tau māmā me te tikanga paremata’.

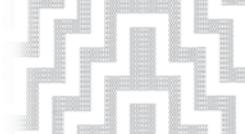


Ko te hīkoi tuarua o tēnei tauira whakaako, ko te arataki i ngā ākonga ki te ‘whakaahua ā-hinengaro’ i te whakamahinga o ngā rauemi. Arā, kāore he rauemi hei rāwekeweke mā te ākonga, engari ka āta whai i te whakamahinga o ngā rauemi i rō hinengaro. I ētahi wā, he āhua uaua tēnei, nō reira, e pai ana te hoki whakamuri ki te whakamahi rauemi. He wā anō, ka taea e te ākonga i roto anake i tōna hinengaro. He pai hoki kia tono mā te ākonga e whakamārama te rautaki i whāia e ia i roto i tōna hinengaro. Koia nei ngā momo pātai hei kukume i ngā whakamārama a ngā ākonga:

- He aha te mahi i roto i tō hinengaro?
- I aha koe?
- Whakamāramahia mai tō rautaki.
- He aha tō mahi tuatahi... tuarua?
- Mēnā he rauemi āu, ka aha koe?
- He aha te huarahi i whāia e koe i roto i tō hinengaro?

Ko te hīkoi tuatoru o tēnei tauira whakaako, ko te whakamahi i ngā tikanga tau hei whakaoti rapanga. Ka tae atu te ākonga ki tēnei wāhangā, ka taea e ia te wāwāhi tau, i runga anō i ngā tikanga o tā tātou pūnaha tau. Ka whakaurua ngā tau nui ki roto i ngā rapanga, nā te mea he uaua te whakaoti mā te ‘whakaahua ā-hinengaro’. Hei tauira, ko te $29 + 16$. He uaua te āta whakaaro i te whakamahinga o te anga tekau me te neke i ngā porotiti i roto i te hinengaro. Engari, ka whai tonu i taua rautaki ‘te tau māmā me te tikanga paremata’, ka huri ki te $30 + 15$, ā, he māmā te whakaoti i rō hinengaro, arā, ka 45.

He pai tēnei tauira mō te whakaako rautaki hou. Arā, ka whakamahia he rauemi i te tuatahi, ā, ka aratakina ngā ākonga ki te whakamahi i ngā tikanga tau ā tōna wā. Kei te pouako tonu te whiriwhiri mō te wā e tika ana hei kukume i ngā ākonga ki ‘te whakaahua ā-hinengaro’ me ‘te tikanga tau’. Ko tā te pouako, he āta mātakitaki, he āta whakarongo, he āta tuku i ngā pātai e hāngai ana. He mea nui kia tonoa ngā ākonga kia whakamārama i ā rātou rautaki. Mā konei e pakari ai te reo, e pūmau anō ai te rautaki tau.



Wāhanga 2

Te Whakarōpū i ngā Ākonga



Te Aromatawai

Ko te take matua mō te aromatawai, kia mōhio te pouako ki te taumata whakaaro o te ākonga. Mā konei e tōtika ai tā te pouako whakamahere i ngā kaupapa hei ako tonu ā muri iho, me te taumata o ngā mahi. Ko te Uiui Aromatawai o Te Poutama Tau (tirohia Te Poutama Tau, Pukapuka Tuarua) tētahi aromatawai e hāngai ana ki te whenu tau. Arā kē atu ngā huarahi aromatawai, engari ko te mea nui, kia mōhio te pouako ki te kaupae o te ākonga i te Mahere Tau.

Kei te pukapuka tuarua o Te Poutama Tau ngā korero whānui mō tēnei mea te aromatawai. Ehara i te mea, mā te Uiui Aromatawai noa iho e mōhio ai te pouako he pēhea nei te whanake haere o te ākonga. E tika ana kia haere tahi te mahi whakaako me te aromatawai, kia kaua te aromatawai e whakararu i te ako. I te wā e whakaako rōpū ana te pouako e rangona ana ngā whakamārama a ngā ākonga, koia hei aromatawai mā te pouako. I te takanga o te wā, e pai ana te tuku pātai hei ‘Aromatawai Poto’ i te haere whakamua o te ākonga. Tirohia te Uiui Aromatawai o Te Poutama Tau (te Pukapuka Tuarua) mō ngā momo pātai e hāngai ana, kei runga hoki i te pae ipurangi o nzmaths ētahi Āpitihanga Uiui Rautaki, me ētahi whakamātautau mātauranga tau: http://nzmaths.co.nz/te-poutama-tau?parent_node

Ko tētahi mahi a te pouako, he tuhi, he pupuri i ngā hua, i ngā taunaki, i ngā kitenga ka puta i ngā mahi aromatawai. Kei te Wāhanga 5 o tēnei pukapuka ētahi whārangi hei tuhi mā te pouako i āna kōrero aromatawai, e hāngai ana ki ngā whāinga ako o te Mahere Tau, o tēnā kaupae, o tēnā kaupae¹. Raua atu ēnei whārangi ki te kōnae aromatawai o te ākonga, koia hei pūtake mō te tuhi pūrongo, ki te whakamōhio atu ki te ākonga me ūna mātua e pēhea ana te ekenga panuku. He pai anō hoki te whakamahi i ngā whāinga ako kei ēnei whārangi, ki te whakamōhio atu i ngā ākonga he aha te kaupapa e ākona ana. Māna, mā te ākonga anō e aromatawai, mēnā kua tutuki i a ia te whāinga, kei te haere tonu rānei tana ako.

Te Whakamahi i ngā Hua o te Uiui Aromatawai o Te Poutama Tau

Ina āta tirohia ngā hua ka puta i ngā pātai mātauranga o te Uiui Aromatawai, tērā e kitea ngā āhuatanga o te mātauranga tau e pakari ana ngā ākonga, me ngā āhuatanga hei whakapakari ake. Ko ngā āhuatanga hei whakapakari e hāngai ana ki te nuinga o ngā ākonga, koia pea hei whakaako ki te katoa o te akomanga, ākene pea i te ‘wā whakamahana’ o ia akoranga.

Kei roto i te Pukapuka Tuawhā o Te Poutama Tau ngā ngohe, arā, ngā mahi whakaako e pā ana ki te mātauranga tau.

Mō ētahi ākonga tokomaha, kāore e rite ana te kaupae rautaki me te kaupae mātauranga. Hei tauira, he pakari pea te taha ki ngā rautaki, engari he uua tonu te whakamahi i aua rautaki, nā te ngoikore pea o te mātauranga ki ngā meka matua.

Ākene pea e whakamahi ana te ākonga i ngā rautaki e hāngai ana ki ētahi kaupae maha. Nō reira, mō te whakarōpū, whakatauria te kaupae rautaki e tino whakamahia ana e te ākonga, koia hei waitohu i te rōpū e tika ana mōna.

Kei ngā whārangi e whai mai ana ngā tūtohi hei tuhi mā te pouako i ngā rōpū ākonga e hāngai ana ki tēnā kaupae, ki tēnā, i runga anō i ngā hua ka puta i ngā mahi aromatawai²:

- ko te whārangi 13 mō ngā kaupae 0 ki te 4;
- ko te whārangi 14 mō ngā kaupae 4 ki te 8;
- ko te whārangi 15 hei tauira noa iho mō te whakarōpū i tētahi akomanga.

¹Kei te pae ipurangi o www.nzmaths.co.nz ēnei whārangi aromatawai hei tiki atu mā te pouako ina hiahiatia.

²Kei te pae ipurangi o www.nzmaths.co.nz ēnei whārangi hei tiki atu mā te pouako ina hiahiatia.

Ngā Rōpū Whakaako Rautaki Tau (Kaupae 0 – 4)*

* Kei te pae ipurangi o www.nzmaths.co.nz ēnei whārangī hei tiki atu mā te pouako ina hiahiatia.

Ngā Rōpū Whakaako Rautaki Tau (Kaupea 4 – 8)*

Pouako	Kura	Paneko
Mātauranga Tau hei Whakapiki		
Kaupae 4: Puanga o te Tatau	Kaupae 5: Pihinga o te Wāwāhi Tau Tapiripiri	Kaupae 6: Puanga o te Wāwāhi Tau Tapiripiri
R T	W T	T H
T R	H T	M W
M M	M M	U W
U T	T H	T H
T R	W T	W T
M M	M M	M W
Kaupae 7: Wāwāhi Tau Whakareta		
R T	W T	T H
T R	H T	M W
M M	M M	U W
U T	T H	T H
T R	W T	W T
M M	M M	M W
Kaupae 8: Wāwāhi Tau Pānga Riterite		
R T	W T	T H
T R	H T	M W
M M	M M	U W
U T	T H	T H
T R	W T	W T
M M	M M	M W

*Kei te pae ipurangi o www.nzmaths.co.nz ēnei whārangī hei tiki atu mā te pouako ima hiahiatia.

Ngā Rōpū Whakaako Rautaki Tau (Kaupae 4 – 8)

(Hei tauira noa iho)

Pouako	Whaea Mihi	Kura	TKKM o Awaraha	Paheko	Tapiri/Tango											
Mātauranga Tau hei Whakapaki																
Kaupae 4: Puanga o te Tatau					Kaupae 5: Pihinga o te Wāwāhi Tau Tāpiripiri											
					Kaupae 6: Puanga o te Wāwāhi Tau Tāpiripiri											
R T	W T	T H	U T	M M	R T	W T	T H	U T	M M	R T	W T	T H	U T	M M		
Mikaera	5	5	5	4	3											
Moetara	5	5	3	4	3											
Colin	5	4	4	4	3											
Roimata	5	5	4	4	4											
Rangi	4	4	4	4	3											
Ihaka	4	4	5	4	3											
						Merchira	5	5	4	4						
						Pinihi	5	4	4	4						
						Inia	5	4	5	4						
						Joel	4	4	4	4						
						Ngahina	6	5	4	4						
						Rupena	5	5	4	4						
											Nadia	5	5	5	5	
											Oriwia	5	5	5	6	
											Pene	5	5	5	5	
											Quentin	5	5	5	5	
												Rāhera	6	6	6	6
												Manahi	6	6	5	6

• Te raupapa haurau waetahi
 • Ngā 10, ngā 100, me ngā 1,000 kei roto i tērahi tau (ki te 999,999)

Kaupae 7:
Wāwāhi Tau Whakarea

RT = Te Raupapa Tau
 WTT = Te Whakaingoa Tohutau
 TH = Ngā Tau Hauatanga
 UTW = Te Uara Tū me te Whakarōpu
 MM = Ngā Meka Matua

Te Whakahaere Rōpū Ako

E tutuki pai ai te mahi ā-rōpū o te akomanga, me mātua whakaako ngā ākonga:

- kia taunga ki te mahi wehe kē i te pouako, ahakoa e mahi takitahi, takirua ana, e mahi ā-rōpū ana rānei. Mēnā ka taunga ngā ākonga ki te mahi wehe kē, kātahi ka pai te whakaako ā-rōpū. Arā, i te wā e mahi tahi ana te pouako me tētahi rōpū, e mahi wehe kē ana ērā atu o ngā rōpū, me tā rātou pūmau anō ki te mahi i whakaritea mā rātou;
- kia taunga ki te whakamahi, ki te tiaki hoki i ngā momo rauemi pāngarau, ina he wāhi nui ki te whakamahi rauemi i roto i ngā akoranga o Te Poutama Tau.

Koia nei pea ētahi ritenga mahi hei whakatau mā te pouako me āna ākonga, kia pai ai te haere o te wā ako:

- Ngā whakahaere mō te whakaako i tētahi ngohe/kēmu hou.
- Te huarahi hei whai mā te ākonga mēnā ka raruraru ia, ā, kāore e wātea ana te pouako ki te whakautu i āna pātai.
- Te tuku i ngā tohutohu mō te wā ako, arā, he aha te mahi a tēnā rōpū, a tēnā. E pai ana te whakamahi i tētahi ‘Papatohu Pāngarau’ (tirohia te whārangī 17).
- Te tirotiro i ngā mahi a ngā ākonga – mēnā kua oti, kua tutuki tā te pouako i tohu ai.
- Te tirotiro mēnā i tika ngā whakautu me ngā whakamārama a ngā ākonga.

He nui ngā hua ka puta mēnā ka mahi takirua ngā ākonga i te wā e mahi wehe kē ana rātou i te pouako. Arā, mā te whakawhitiwhiti kōrero ki te hoa mahi, mā te āwhina a tētahi i tētahi, ka tino ū te kaupapa ki te hinengaro. E pai ana mēnā he ōrite te kaupae mahi a tēnā me tēnā o te takirua.

He wā anō, e pai ana te mahi takitahi, e kite ai te pouako he aha ngā momo rapanga e taea ana e te ākonga i tōna kotahi. Koia nei ētahi momo mahi mā te ākonga takitahi:

- He mahi whakapakari i ngā rautaki i whakaakona i te wā ako i mua.
- He kēmu e hāngai ana ki te kaupae rautaki o te ākonga.
- He mahi whakapakari i te mātauranga tau e hāngai ki te kaupae kei reira te ākonga.
- He rapanga hei whakaoti.
- He tuhi rapanga hei whakaoti mā tētahi atu ākonga.
- He whakamahi rauemi hei tūhura i tētahi kaupapa hou.

I roto i ētahi kura reo Māori maha, he nui tonu ngā kaupae o ngā ākonga i te akomanga kotahi. Arā pea, mai i te tau 1 ki te tau 4, mai i te tau 3 ki te tau 8 rānei. He mea nui i roto i ēnei akomanga kia taunga ngā tamariki ki te mahi wehe kē i te pouako, ki te whai i ngā tohutohu mō te mahi i whakaritea mā tēnā tamaiti, mā tēnā, mā tēnā rōpū, mā tēnā.

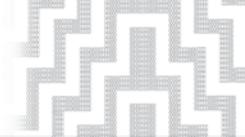
Ko tā te pouako, he whakarite i ngā mahi e hāngai ana mā ia ākonga, mā ia rōpū rānei. Me mārama tonu āna tohutohu, kia mōhio ai ngā ākonga he aha ā rātou mahi mō ia rā (he pai te whakamahi i tētahi ‘Papatohu Pāngarau’ (kei raro iho nei te tauira). Ka huri haere te pouako ki tēnā ākonga, ki tēnā rōpū, ki te whakaako, ki te āwhina, ki te aromatawai, ki te whakatenatena, otirā ki te tuku pātai hei kukume i ngā whakaaro pāngarau. He wā anō e pai ana ki te whakakotahi mai i ētahi ākonga, i ētahi rōpū rānei ki te tirotiro i te kaupapa kotahi, ahakoa he rerekē pea te kaupae a tēnā me tēnā.

He mea nui anō kia whakaakona ngā ākonga me pēhea te kimi āwhina i te wā e raru ana. Arā pea, ka pātai atu ki te pouako, ki tētahi ‘tuakana pāngarau’ rānei. Ka haere rānei ki te kimi āwhina mai i wāhi kē, i tangata kē (pērā i te tumuaki o te kura, tētahi o ngā mātua o te kura rānei).

Te Papatohu Pāngarau

Ko tā te Papatohu Pāngarau, he whakaatu i te mahi a tēnā rōpū, a tēnā, i te roanga atu o tētahi wā ako. I te tauira kei raro iho nei, e rua ngā huringa o ngā rōpū i te wā ako, e whā ngā rōpū:

Ko te huringa tuatahi i roto i te wā ako – kia 20 meneti pea te roa.	Mahi whakamahana:			
	Mahi tuatahi:			
Ka tuhia ngā mahi ki te papa. Ka nukua ngā āhua, koirā hei tohu i ngā mahi a tēnā rōpū, a tēnā.				
	pouako	mahi whakaū	kēmu	whakaoti rapanga
Ko te huringa tuarua i roto i te wā ako – kia 20 meneti anō pea te roa.	Mahi tuarua:			
				
	pouako	mahi whakaū	kēmu	whakaoti rapanga
	Mahi whakakapi:			
	Ko ngā āhua hei tohu i ngā rōpū.			



Wāhangā 3

Te Whakamahere i te Reo



Ko te reo te huarahi matua e tutuki pai ai te mahi a te pouako. Nō reira, e tika ana kia āta whakaaro te pouako me pēhea te whakairo i āna kōrero i mua tonu i te wā ako. Arā pea, he kimi atu i ngā kupu, i ngā whakamārama, i ngā pātai hei whakamahi māna i roto i tana akoranga. He mea nui te tauira reo o te pouako, te reo tāruarua o te pouako, e hopukina ai e te ākonga ngā kupu hou o te pāngarau me te āhua o te whakatakoto i te kupu.

Kei te Mahere Tau (te Pukapuka Tuatahi o Te Poutama Tau, whārangi 32 ki te 35) ngā kupu matua, ngā rerenga kōrero matua me ngā momo tuhituhi e hāngai ana ki tēnā kaupae rautaki, ki tēnā, hei āwhina i te pouako ki te whakamahere i te taha reo o ngā akoranga pāngarau.

Hei tauira, mēnā he akoranga e pā ana ki te rautaki ‘te tau māmā me te tikanga paremata’, koia nei pea ētahi o ngā kupu me ngā rerenga kōrero e hāngai ana:

$$27 + 15 = \square$$

Tauira rerenga kōrero/pātai	Kupu matua
Kawea te 27 ki te tau māmā e pātata ana.	tau māmā
He aha te tau māmā e pātata ana?	pātata
He aha e māmā ai te 30?	tau ngahuru
He māmā te tāpiri i tētahi tau ki te tau ngahuru (pērā i te 30).	rārangi tau
Tāpiria te 3 ki te 27, ka 30. He tau māmā te 30.	kawea
E pai noa iho ana te tāpiri i te 3, mēnā ka tangohia ā muri atu.	
Tāpiria te 15 ki te 30, ka 45.	
He aha te mahi ināianei?	
E tika ana kia tangohia te 3 ināianei.	
Me pēhea te whakaatu i ēnei mahi ki te rārangi tau?	

Ngā Momo Pātai¹

He tauira pātai, tauira tohutohu e whai ake nei, kua wehea ki ngā momo pātai i whakaputaina e Bloom². E ono ngā rōpū o ngā momo pātai e pā ana ki te āhua o te whakamahinga o te hinengaro hei whakautu i te pātai. Ehara i te mea e tū motuhake ana ia rōpū o ngā momo pātai, engari e tūhonohono ana. Mō te pātai kotahi, he rerekē pea te āhua o te whakamahinga o te hinengaro o tēnā tamaiti, o tēnā tamaiti, o tēnā. Arā pea, he pātai whakaputa mahara te 8 + 7 mō tētahi tamaiti, engari he pātai whakamahi mōhiotanga mō tētahi atu (arā, me whai rautaki hei whiriwhiri i te otinga).

1. He Pātai Whakaputa Maharatanga

He pātai whakaputa mahara ēnei e whai ake nei, e kitea ai mehemea kua mau i te tamaiti ngā meka matua, ngā mōhiotanga rānei e pā ana ki te pātai. Arā, he tiki wawe noa atu i te whakautu i ngā pūmahara. Mehemea kāore anō kia mau i te tamaiti ngā meka matua, ngā mōhiotanga rānei, he pātai whakamahi mōhiotanga kē. Arā, me āta whakamahi tētahi rautaki e kitea ai te otinga o te rapanga.

- Tāpiria te 5 me te 7.
- E 3, whakareatia ki te 4.

¹He mea tango mai ēnei tauira kōrero i: *Te Reo Pāngarau: Putanga Tuarua*. Papaioea: He Kupenga Hao i te Reo (whārangi, 372-375)

²Tirohia te pukapuka: Anderson, L. & Sosniak, L. (eds.) (1994). *Bloom's taxonomy: A forty-year retrospective*. Chicago: University of Chicago Press.

- E hia ngā 5 kei roto i te 25?
- Kōrerohia mai ngā taurea o te 4.
- Raupapahia ēnei hautau mai i te mea iti ki te mea nui.
- He aha te tau i muri tonu mai i te 19?
- Whakaingoatia ēnei hautau.

2. He Pātai Whakaputa Mōhiotanga

- Whakamahia tēnei rautaki hei whakaoti i te rapanga.
- Whakamāramahia mai te rautaki i whakamahia e koe hei whakaoti i te rapanga.
- He aha koe i mōhio ai?
- I pēhea koe i mōhio ai?
- He aha te huarahi i whāia e koe hei whakaoti i te rapanga?
- Nāu i aha?
- I pēhea te whakaoti?
- Me pēhea te raupapa ... (i ngā hautau nei)?
- Whakamāramatia mai te rautaki i whāia e Hine hei whakaoti i te rapanga.
- Whakamahia te (anga tekau/anga pirepore/...) hei whakamārama i te rautaki.
- Me pēhea te tuhi ki te reo tohu pāngarau?
- He aha te tikanga o te ... (tauraro o te hautau $\frac{3}{4}$)?

3. He Pātai Whakamahi Mōhiotanga

I konei ko ngā mahi whakaoti rapanga, arā, ko tā te tamaiti he whakamahi i ūna mōhiotanga, he kimi rautaki hei whakaoti i te rapanga.

- He tāpiri, he tango, he aha rānei te mahi hei whakaoti i te rapanga? He aha ai?
- Tāpiria te 8 me te 7, ka hia? Ina hurihia te 7 ki te 17, ka pēhea rā te otinga?
- He aha rā te otinga mehemea ka ... (wehea kia whā ngā wāhanga ūrite)?
- Me pēhea te whakamahi i te rautaki a Hine hei whakaoti i te rapanga?
- Me tīmata koe ki hea?
- He aha te hīkoi tuarua?
- Whakaaturia/Whakamāramatia mai ngā hīkoi katoa.
- Tuhia he pikitia hei whakaatu i te rapanga.

4. He Pātai Tātari Mōhiotanga

- He aha te tauira e kitea mai ana? Whakamāramahia mai.
- He aha e whakaaturia mai ana i roto i te otinga nei?
- He aha ngā rerekētanga, ngā ritenga rānei o ēnei rautaki?
- He aha pea hei ingoa mō tēnā rautaki? He aha ai?

5. He Pātai Arotake Mōhiotanga

- Ko tēhea te rautaki māmā noa iho hei whakaoti i te rapanga? He aha ai?
- Kei te tika rānei tō whakautu? Me pēhea koe e tino mōhio ai?
- He aha i pai ai tēnā rautaki hei whakaoti i te rapanga?
- I tutuki pai tō mahi whakaoti i te rapanga? He aha ai? He aha i kore ai?
- He aha te mea kua ākona e koe?

6. He Pātai Waihanga Mōhiotanga

- Kimihia he huarahi hei whakaoti i te rapanga.
- Titoa mai he rapanga pakitau e whai wāhi mai ana te ... (ōrau).
- Hangaia tētahi ... (mahere/tapawhā mīharo/tauira ...).



Wāhanga 4

Te Whakamahere i te Pāngarau: Ngā Momo Mahere



Kei te pouako, kei te kura tonu te tikanga, engari, me āta whakaaroaro ēnei momo mahere, kia pai ai te whakaako i te pāngarau.

Te Mahere Tiro Roa

Koinei pea te tīmatanga. Kei tēnei o ngā mahere te ahunga whakamua o te whakaako i te pāngarau i te roanga atu o te tau, o tētahi wāhanga rānei o te tau. Ehara i te mea kia kōhatutia, engari e taea ana te whakarerekē i runga i te āhua o ngā mahi a ngā ākonga.

E tika ana kia whakaaturia ki te Mahere Tiro Roa te wāhi nui ki te whenu Tau i roto i ngā tau 1 ki te 4 o te kura. Ākene pea ka tuhia atu ki te Mahere Tiro Roa ngā wā o te aromatawai ūkawa, ko tētahi hoki, ko te wā ka hoki whakamuri ki te tirotiro anō i ētahi o ngā kaupapa kua otī i mua.

Hei tauira noa iho o te Mahere Tiro Roa māmā:

Wiki	Wāhanga 1	Wāhanga 2	Wāhanga 3	Wāhanga 4
1	Te Tau	Te Ine	Te Taurangi	Te Taurangi
2	Te Tau	Te Ine	Te Taurangi	Te Taurangi
3	Te Tau	Te Tau	Te Tauanga	Te Tau He aromatawai ūkawa
4	Te Tau	Te Tau	Te Tauanga	Te Tau
5	Te Āhuahanga	Te Tau	Te Tau	Te Tau
6	Te Āhuahanga	Te Tau	Te Tau	Te Ine
7	Te Tauanga	Te Āhuahanga He aromatawai ūkawa	Te Tau	Te Ine
8	Te Tauanga	Te Āhuahanga	Te Ine	Te Āhuahanga
9	Te Ine	Te Āhuahanga	Te Ine	Te Āhuahanga
10	He titiro whakamuri	He titiro whakamuri	He titiro whakamuri	He titiro whakamuri

Te Mahere Kōwae Ako

Koinei te whakamahere i tētahi o ngā kaupapa kua whakatakotoria ki te Mahere Tiro Roa. E pai ake ana kia arotahi ki ētahi whāinga e toru, e whā rānei o te kaupapa, ā, ka hōhonu tonu te āhua o te whakaako. He moumou tāima pea te aro ki ētahi whāinga huhua, engari he pāpaku noa iho te āhua o te whakaako. Hei tauira, kia rua wiki pea e arotahi ana ki te hautau, kātahi pea ka nuku ki kaupapa kē, pērā i ngā rautaki whakarea.

Kei te Wāhanga 6 o tēnei pukapuka (whārangi 43) ētahi kōwae ako e hāngai ana ki tēnā kaupae, ki tēnā kaupae o te Mahere Tau, me te panuku o te ākonga i roto i ngā momo rautaki paheko e toru (te tāpiri me te tango, te whakarea me te whakawehi, te pānga riterite). Tekau mā waru katoa ngā mahere kōwae ako, koia ko ēnei*:

Kaupae	Tāpiri/Tango	Whakarea/Whakawehi	Pānga Riterite
0 – 1	✓		
1 – 2	✓		
2 – 3	✓		✓
3 – 4	✓	✓	✓
4 – 5	✓	✓	✓
5 – 6	✓	✓	✓
6 – 7	✓	✓	✓
7 – 8		✓	✓

He tauira tēnei o tētahi wāhanga o tētahi o ngā kōwae ako, e kitea ai ngā āhuatanga e whakaaturia ana ki te mahere:

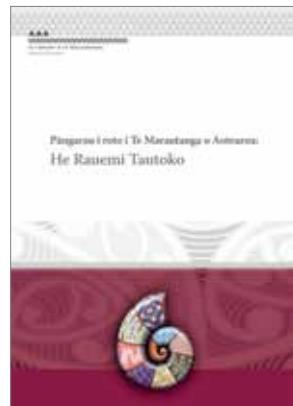
Te Panuku o ngā Kaupae: 5 – 6	Te Rautaki Paheko: Te Whakarea me te Whakawehi									
Ngā Whāinga Paetae: Te Tau, Taumata 3	Mahere Tau	0	1	2	3	4	5	6	7	8
3.1 (Mātauranga Tau)	<p>Ka mōhio ki ngā tauotī 0–1,000,000: te whakaingoa i ngā tohutau; ngā momo raupapa tatauranga tauotī; ngā meka matua mō te tāpiri, te tango me te whakarea; te whakaawhiwhi tauotī, tau ā-ira hoki ki te 1, te 10, te 100 rānei e pātata ana; ngā tikanga uara tū o ngā tauotī me ngā tau ā-ira (kia 3 ngā mati ā-ira); te maha o ngā haurau, ngā hautekau, ngā tahi, ngā tekau, ngā rau me ngā mano kei roto i tētahi tau; te rahi me te hanga o tētahi tau.</p> <p>...</p>									
Te Mātauranga	Ngā Rauemi e Hāngai ana									
Ka mōhio ki ngā rōpū o te 2, o te 3, o te 5, me te 10 kei roto i ngā tau, tae atu ki te 100, me ngā toenga ka hua mai.	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Tatau Māwhitiwhiti i te Rārangi Tau (wh.8) • Ararā! (wh.9) • Tātaitai (wh.15) • Te Whakarea hei Whakaoti Whakawehenga (wh.116) <p>...</p>									
Ngā Rautaki	Te Panuku o ngā Rapanga								Ngā Rauemi e Hāngai ana	
Ka whakamahia te ‘āhuatanga tātai tohatoha’ me ngā meka whakarea mō te 5 hei whakaputa i ngā meka whakarea mō te 6, te 7, me te 4.	<p>$2 \times 5 = \square$, nō reira: $2 \times 6 = \square$, $2 \times 7 = \square$</p> <p>$4 \times 5 = \square$, nō reira: $4 \times 6 = \square$, $4 \times 7 = \square$</p> <p>...</p>								<i>TPT, Pukapuka 6:</i>	
	<ul style="list-style-type: none"> • Ngā kōrero whakataki mō te Kaupae 5–6 (wh.41) • Whakareatia ki te Rima (wh.47) • Parematatia (wh.54) <p>...</p>									

*Kei te pae ipurangi o www.nzmaths.co.nz ēnei whārangi aromatawai hei tiki atu mā te pouako ina hiahiatia.

Kei te pae tukutuku o www.nzmaths.co.nz tētahi whārangi hei rapu i ngā kōwae ako o nzmaths e hāngai ana ki te taumata, te whāinga paetae, te kaupae, te whenu rānei e hiahia ana koe.

The screenshot shows the homepage of the NZ Maths website. At the top, there's a navigation bar with 'TKI NZTE | Communities | Schools' and a search bar. Below the navigation is a large graphic of the numbers 1 through 9 in various colors. The main content area features a section titled 'Rapua Ngā Rauemi' with a star icon. It includes a short text about the purpose of the page, a form for 'Koefuhia te tauemi' (submitting a resource), and a section for 'Tirohia ngā Rauemi e Hāngai ana ki ngā Whāinga Paetae o te Marautanga'. On the left side, there's a sidebar with a menu of links related to mathematics education.

Kei te pukapuka *Pāngarau i roto i te Marautanga o Aotearoa: He Rauemi Tautoko* (whārangi 74 – 85) te rārangitanga mai o ngā rauemi e hāngai ana ki ia whāinga paetae o te marautanga pāngarau. Ka whai wāhi atu ko ngā kōwae ako o nzmaths, ko ngā pukapuka o Te Poutama Tau, ko ngā pukapuka tautoko i ngā whanaketanga (ngā whenu kē atu i te tau), ko ngā pukapuka hoki o *He Tau Anō Te Tau*.



Te Mahere ā-Wiki

Kei roto i tēnei o ngā mahere ngā mahi me ngā nekeneketanga o ia rōpū mō ngā rā katoa o te wiki. He pai pea kia kaua e whakamaheretia te katoa o te wiki, kia tae noa atu pea ki te Rāapa, kātahi ka whakamaheretia te Rāpare me te Rāmere i runga i te haere pēhea o ngā rōpū i ngā rā tōmua o te wiki.

Kei raro iho nei he tauira o tētahi mahere ā-wiki. I tēnei mahere ā-wiki mō tēnei akomanga:

- E toru ngā rōpū ako.
- Ka noho kotahi te akomanga mō te wā whakamahana (kia 10 meneti pea te roa o tēnei mahi), ko te titiro whakamuri ki tētahi o ngā kaupapa kua oti kē te ako i ngā wiki o mua (i konei, ko te horahanga tapawhā).
- Ka wehea ia wā ako ki ētahi wāhangā matua e rua (kei te takiwā pea o te 20 meneti te roa o ia wāhangā).
- Ka nuku haere ngā rōpū ki ngā momo mahi e toru nei i te roanga atu o te wiki. E rua o ēnei mahi ka oti i ia rā o te wiki:
 - te mahi i te taha o te pouako;
 - te mahi whakaū i te kaupapa e akohia ana;
 - te tūhuratanga.

E tutuki ai tēnei momo whakamahere, me taunga ngā ākonga ki te mahi wehe kē i te pouako, ki te mahi ā-rōpū, ki te mahi takitahi, ki ngā tikanga mō te tiki me te whakamahi rauemi.

Mahere ā-Wiki: Pangarau

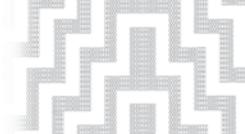
Te Mātauranga Tau hei tinotiro mā te katoa o te akomanga:

- Ngā meka matua mō te whakarea me te whakawehi

Wiki 3, Wāhanga 2 o te 2012

Te Rōpū, te Kaupae me te Whāinga	Rāhina	Rātū	Rāapa	Rāpare	Rāmere
Whakamahana →	<ul style="list-style-type: none"> • te raupapa āhua mai i te iti ki te rāhi o te horahanga te horahanga 	<ul style="list-style-type: none"> • te tuhi tapawhā ki te pepa tukutuku kia 36 waeine te horahanga 	<ul style="list-style-type: none"> • te tātai horahanga tapawhā hāngai 	<ul style="list-style-type: none"> • te tātai i te roa o tētahi tapa, ina mōhiotia te horahanga me te roa o tētahi o ngā tapa 	<ul style="list-style-type: none"> • te whirihiri horahanga mēnā e 24cm te paenga o tētahi tapawhā hāngai
Rōpū Kauri	Pouako Tūtohi Tukutuku Kararehe TPT, Pukapuka 6 (wh.25) Te whakaoti rapanga whakarea, whakawehi hoki mā te tāpiri tāruarua.	Tūhuratanga He aha te Pāngā? <i>Hei Tauteko i te Marautanga Pānganau: Te Hanga.</i> (wh.168-169)	Mahi Whakāū Whakaaturia ki te tūtohi tukutuku: $6 \times 3 = \square$ $8 \times 5 = \square$	<p>Tohaina kia Ōrite TPT, Pukapuka 6 (wh.29)</p> <p>$3 \times 6 = \square$ $4 \times 10 = \square$</p> <p>Ko ēheo o ēnei tūtohi tukutuku e orite ana? Tuhia he tūtohi tukutuku e ōrite ana.</p>	<p>Pouako</p> <p>Tūhuratanga Whakarea ki te Rua <i>He Tau anō te Tat, Te Tau, Pukapuka Tuarua, Taumata 2</i> (wh.18)</p>
Mahi Whakāū	Pouako Tūtohi he pakitaū, ka whakaoti ai: TPT, Pukapuka 6 (wh.25)	<p>$6 \times 5 = \square$ $8 \times 4 = \square$ $6 \times 3 = 18$, nō reira, $6 \times 4 = \square$, $7 \times 3 = \square$, $3 \times 6 = \square$</p>	<p>Tūhuratanga E hia ngā tūtohi tukutuku e taea ana te ruhi: • kia whai pānga ki te: 6×4 • kia whai pānga ki te: 2×10 • kia 18 katoa ngā wehenga</p>	<p>Mahi Whakāū Tuhia he pakitaū, ka whakaoti ai: • te whakaoti mahi tākaro kēmu pāngarau • te aromatawai takirua i ngā meka whakareatanga</p>	<p>Hei Mahi: • te whakaoti mahi tākaro kēmu pāngarau • te aromatawai takirua i ngā meka whakareatanga</p>

Rōpū Tōtara	Mahi Whakaū $a \times e = 24$. He aha ngā tau? $a \times e \times b = 36$. He aha ngā tau? Te whakamahi meka whakareatanga mōhio hei whirihiri whakareatanga kāore e mōhioria ana.	Mahi Whakaū He aha ērāhi whakareatanga e whai pānga ana ki ēnei: $6 \times 5 = 30$ Titoa tērāhi rapanga pēnei hei whakaotū mā tērāhi atu. $10 \times 5 = 50$ $8 \times 5 = 40$ $4 \times 50 = 200$ Whakamāramatia.	Pouako Paremataitia <i>TPT, Pukapuka 6</i> (wh.54)	Tūhuratanga Hoki Ana ki te Kāinga <i>He Tau anō te Tau, Ngā Meka Matua, Taumata 2-3</i> (wh.11) $5 \times 19 = \square$ $4 \times 28 = \square$ $3 \times 102 = \square$ $7 \times 999 = \square$ $6 \times 5 = \square \times 6$ $25 \times \square = 8 \times 50$	Mahi Whakaū 5 × 19 = \square $4 \times 28 = \square$ $3 \times 102 = \square$ $7 \times 999 = \square$ $6 \times 5 = \square \times 6$ $25 \times \square = 8 \times 50$
Rōpū Kahikatea	Mahi Whakaū Ngā Tini Tari <i>He Tau anō te Tau, Te Tau, Taumata 3</i> (wh.22)	Tūhuratanga He Tauira Whakareatanga <i>Hei Tautoko i te Marautanga Pāngarau: Te Tauri me te Pānga</i> (wh.156)	Mahi Whakaū $10 \times 8 = 80$ $20 \times 6 = 120$ $100 \times 7 = 700$ He ahā ērāhi atu whakareatanga e whai pānga ana ki te $25 \times 12 = 300?$	Pouako Te Huri Koaro i te Whakareatanga <i>TPT Pukapuka 6</i> (wh.58)	Hei Mahi: • Te whakaotū mahi • Te tākaro kēmu pāngarau • Te aromatawai takirua i ngā meka whakareatanga
Rōpū Kahikatea	Mahi Whakaū Ngā Tini Tari <i>He Tau anō te Tau, Te Tau, Taumata 3</i> (wh.22)	Tūhuratanga He Tikanga Maha <i>He Tau anō te Tau, Te Tau, Pukapuka Tuariua, Taumata 3</i> (wh.10-11)	Mahi Whakaū Tuhia kia 3 ngā rautaki: $16 \times 4 = \square$ $27 \times 3 = \square$ $6 \times 28 = \square$ $46 \times 5 = \square$ Tuhia he whakareatanga tau mati-3, ka whakamārama ai i ērāhi rautaki.	Pouako Rautaki Whakareata Whānui <i>TPT, Pukapuka 6</i> (wh.84)	Pouako Tapahia, ka Whakapiri ai <i>TPT, Pukapuka 6</i> (wh.79)
Rōpū Kahikatea	Tūhuratanga He Tau Piri Tata <i>Hei Tautoko i te Marautanga Pāngarau: Te Tauri me te Pānga</i> (wh.157)	Mahi Whakaū Tuhia he pikitia hei whakaatu rautaki: $23 \times 4 = \square$ $19 \times 7 = \square$	Tūhuratanga Te Tikanga a Topi <i>He Tau anō te Tau, Ngā Meka Matua, Taumata 3-4</i> (wh.3)	Tūhuratanga Rautaki Whakareata Whānui <i>TPT, Pukapuka 6</i> (wh.84)	Hei Mahi: • Te whakaotū mahi • Te tākaro kēmu pāngarau • Te aromatawai takirua i ngā meka whakareatanga



Wāhangā 5

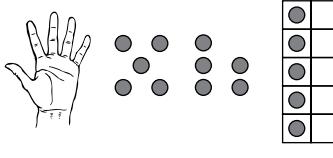
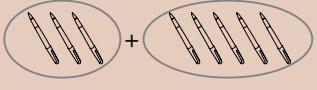
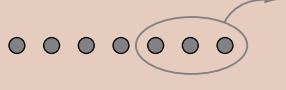
Te Ekenga Panuku a te Ākonga: Te Whenu Tau^{*} (He whārangi aromatawai)



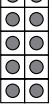
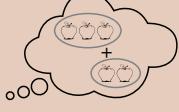
Te Ekenga Panuku a te Ākonga: Te Whenu Tau

Kaupae: 0 – 1		Ingoa:	
E ako ana ahau ...		Ngā kōrero aromatawai	
Mātauranga	ki te pānui	i ngā tau ki te 10. Hei tauira: tahi 1, rua 2 ... whitu 7 ... tekau 10	
	ki te tatau	whakamua ki te 10. Arā: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10	
	ki te tatau	whakamuri, mai i te 10. Arā: 10, 9, 8, 7, 6, 5, 4, 3, 2, 1	
Rautaki	ki te tatau	i ngā taonga kei roto i tētahi huinga (tae atu ki te 10). Hei tauira: 	

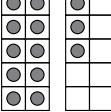
Te Ekenga Panuku a te Ākonga: Te Whenu Tau

Kaupae: 1 – 2		Ingoa:	
E ako ana ahau ...		Ngā kōrero aromatawai	
Mātauranga	ki te pānui	i ngā tau ki te 20. Hei tauira: tekau mā tahi 11 ... tekau mā ono 16 ... rua tekau 20	
	ki te kōrero	i te tau o muri atu i tētahi tau, tae atu ki te 10. Hei tauira: 	
	ki te kōrero	i te tau o mua mai i tētahi tau, tae atu ki te 10. Hei tauira: 	
	i ngā tauira tau	mō ngā tau 1 ki te 5. Hei tauira: 	
Rautaki	ki te hono	i ētahi huinga taonga, me te tatau anō i te tapeke (tae atu ki te 10). Hei tauira: $3 + 5 = 8$ 	
	ki te wāwāhi	huinga taonga, me te tatau i ngā taonga e toe ana. Hei tauira: $7 - 3 = 4$ 	

Te Ekenga Panuku a te Ākonga: Te Whenu Tau

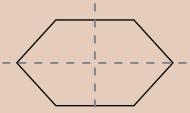
Kaupae: 2 – 3		Ingoa:	
E ako ana ahau...		Ngā kōrero aromatawai	
Mātauranga	ki te tatau	mawhiti-2, tae atu ki te 20. Arā: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20	
	ki te kōrero	i te tau o muri atu i tētahi tau, tae atu ki te 20. Hei tauira: 13, __	
	ki te kōrero	i te tau o mua mai i tētahi tau, tae atu ki te 20. Hei tauira: __, 11	
	i ngā tauira tau	mō ngā tau 1 ki te 10. Hei tauira:  	
	i ngā rōpū honohono	tae atu ki te 5. Hei tauira: $3 + 2 = 5$ $5 - 2 = 3$	
Rautaki	ki te whakaoti rapanga tāpiri (tae atu ki te 20)	mā te tatau ā-hinengaro i ngā taonga katoa e honohonotia ana. Hei tauira: 	
	ki te whakaoti rapanga tango (tae atu ki te 20)	mā te tatau ā-hinengaro i ngā taonga. Hei tauira: 	

Te Ekenga Panuku a te Ākonga: Te Whenu Tau

	Kaupae: 3 – 4	Ingoa:	
	E ako ana ahau...	Ngā kōrero aromatawai	
Mātauranga	ki te pānui, ki te tuhi	i ngā tauoti, tae atu ki te 100.	
	ki te tatau whakamua, whakamuri	ā-tahi, mawhiti-2, mawhiti-5, mawhiti-10, tae atu ki te 100.	
	ki te kōrero	i te maha o ngā 10 kei roto i tētahi tau matirua. Hei tauira: E 8 ngā tekau kei roto i te 87.	
	i ngā tau rearua me ngā haurua e whai pānga ana	mō ngā tau 1 ki te 20. Hei tauira: $7 + 7 = 14$ $\frac{1}{2} \text{ o te } 14 = 7$	
	i ngā tauhono me te tekau	Hei tauira: $10 + 3 = 13$ 	
Rautaki	ki te whakaotī rapanga tāpiri (tae atu ki te 100)	mā te tatau ake ā-hinengaro. Hei tauira, ko te $38 + 3$: 	
	ki te whakaotī rapanga tango (tae atu ki te 100)	mā te tatau whakamuri ā-hinengaro. Hei tauira, ko te $19 - 4 = 15$: 	

Te Ekenga Panuku a te Ākonga: Te Whenu Tau

Kaupae: 4 – 5	Ingoa:	Ngā kōrero aromatawai
E ako ana ahau...		Ngā kōrero aromatawai
Mātauranga	ki te pānui, ki te tuhi	i ngā tauoti, tae atu ki te 1,000.
	ki te tatau whakamua, whakamuri	ā-tahi, mawhiti-10, mawhiti-100, tae atu ki te 1,000. Hei tauira: 410, 400, 390, 380 ...
	ki te whakaputa wawe	i te maha o ngā 10 kei roto i tētahi tau matitoru. Hei tauira: E 82 ngā tekau kei roto i te 827.
	i ngā meka tāpiritanga	tae atu ki te 20. Hei tauira: $7 + 8 = 15$
	i ngā meka whakareatanga, me ngā meka whakawehenga e whai pānga ana	mō te 2, te 5 me te 10. Hei tauira: $5 \times 7 = 35$ $35 \div 5 = 7$
Rautaki	ki te whakaoti rapanga tāpiri, rapanga tango hoki	mā te whakamahi tau rearua. Hei tauira: $8 + 7 = 15$, nā te mea $7 + 7 = 14$

		mā te whakamahi i te tau ngahuru hei tau māmā. Hei tauira: $28 + 6 = 28 + 2 + 4 = 30 + 4$	
		mā te wāwāhi uara tū. Hei tauira: $34 + 25 = (30 + 20) + (4 + 5)$	
Rautaki	ki te whakaoti rapanga whakarea, rapanga whakawehe hoki	mā te tāpiri tāruarua. Hei tauira: $6 \times 4 = 6 + 6 + 6 + 6 = 24$	
		mā te huri kōaro i te whakareatanga. Hei tauira: $3 \times 10 = 10 \times 3$	
	ki te whiriwhiri i te hautau waetahi	o tētahi huinga, mā te whakahaurua. Hei tauira: $\frac{1}{4} \text{ o te } 20 \rightarrow \frac{1}{2} \text{ o te } 20 = 10, \frac{1}{2} \text{ o te } 10 = 5$	
		o tētahi āhua, mā te whakamahi hangarite. Hei tauira:	

Te Ekenga Panuku a te Ākonga: Te Whenu Tau

Kaupae: 5 – 6	Ingoa:	Ngā kōrero aromatawai
E ako ana ahau...		
Mātauranga	ki te pānui, ki te raupapa	i ngā tauoti, tae atu ki te 1,000,000. Hei tauira: $36,075 < 90,002 < 201,489$
	ki te whakaputa wawe	i te maha o ngā 10 me ngā 100 kei roto i tētahi tau, tae atu ki te 10,000. Hei tauira: E 734 ngā tekau kei roto i te 7,340.
	ki te pānui, ki te raupapa	i ngā hautau he ūrite te tauraro, he ūrite rānei te taurunga. Hei tauira: $\frac{1}{8} < \frac{1}{5} < \frac{3}{10} < \frac{3}{8}$
	i ngā meka tāpiritanga, me ngā meka tangohanga	tae atu ki te 20. Hei tauira: $7 + 8 = 15$ $13 - 5 = 8$
	i ngā meka whakareatanga	tae atu ki te $10 \times 10 = 100$. Hei tauira: $6 \times 9 = 54$
Rautaki	ki te whakaotī rapanga tāpiri, rapanga tango hoki	mā te wāwāhi uara tū. Hei tauira: $724 - 206 = 724 - 200 - 6$ $= 524 - 6 = 518$

	mā te whakamahi tau māmā me te tikanga paremata. Hei tauira: $834 - 479 = 834 - 500 + 21$ $= 334 + 21 = 355$	
	mā te huri kōaro i te paheko. Hei tauira: $834 - 479 \rightarrow \square + 479 = 834$	
Rautaki	ki te whakaoti rapanga whakarea, rapanga whakawehe hoki mā te wāwāhi i tētahi o ngā tauwehe. Hei tauira: $13 \times 8 = (10 \times 8) + (3 \times 8)$	
	mā te rearua me te haurua. Hei tauira: $24 \times 5 = 12 \times 10$	
	mā te huri kōaro i te whakawehenga. Hei tauira: $63 \div 7 \rightarrow \square \times 7 = 63$	
	ki te whiriwhiri i te hautau waetahi o tētahi rahinga mā te whakamahi whakareatanga. Hei tauira: $\frac{1}{5} \text{ o te } 35 = 7, \text{ nā te mea } 5 \times 7 = 35$	

Te Ekenga Panuku a te Ākonga: Te Whenu Tau

Kaupae: 6 – 7		Ingoa:
E ako ana ahau...		Ngā kōrero aromatawai
Mātauranga	ki te pānui, ki te raupapa	i ngā tau ā-ira, kia 3 ngā mati ā-ira. Hei tauira: $6.25 < 6.3 < 6.402$
	ki te whakaputa wawe	i te hautau ūrite mō ngā haurua, ngā hautoru, ngā hauwhā, ngā haurima, ngā hautekau me ngā haurau. Hei tauira: $\frac{3}{5} = \frac{6}{10} = 0.6$ $\frac{3}{4} = 0.75 = 75\%$
	ki te whakaputa wawe	i te maha o ngā hautekau, ngā 10, ngā 100, me ngā 1,000 kei roto i tētahi tau, tae atu ki te 1,000,000. Hei tauira: E 3,879 ngā hautekau kei roto i te 387.9.
	ki te whakaputa wawe i ngā meka whakarea me ngā meka whakawehē	tae atu ki te $10 \times 10 = 100$, me te $100 \div 10 = 10$. Hei tauira: $6 \times 9 = 54$ $72 \div 8 = 9$
Rautaki	ki te whakaoti rapanga tāpiri, rapanga tango hoki, e whai wāhi mai ana te tau ā-ira, te hautau me te tau tōpū	mā te wāwāhi hautau me te hautau ūrite. Hei tauira: $\frac{3}{4} + \frac{5}{8} = (\frac{6}{8} + \frac{2}{8}) + \frac{3}{8} = 1\frac{3}{8}$
		mā te wāwāhi uara tū, mā te huri kōaro, mā te whakamahi tau māmā. Hei tauira: $2.4 - 1.78 \rightarrow 1.78 + \square = 2.4$ $2.4 - 1.78 = 2.4 - 2 + 0.22$

		mā te paheko ūrite. Hei tauira: $5 - {}^3 = 5 + {}^3$	
Rautaki	ki te whakaoti rapanga whakarea, rapanga whakawehe hoki, e whai wāhi mai ana te tauoti	mā te wāwāhi uara tū. Hei tauira: $56 \times 7 = (50 \times 7) + (6 \times 7)$ $168 \div 7 = (140 \div 7) + (28 \div 7)$	
		mā te tau māmā me te tikanga paremata. Hei tauira: $252 \div 9 \rightarrow 270 \div 9 = 30$, nō reira, $252 \div 9 = 28$	
		mā te wāwāhi tauwehe. Hei tauira: $544 \div 16 \rightarrow 544 \div 2 \div 2 \div 2 \div 2$ $= 34$	
	ki te whakaoti rapanga hautau	mā te whiriwhiri ūwehenga ūrite. Hei tauira: $2:3 = 8:12$, me te ūrite hoki o te $\frac{2}{5} = \frac{8}{20}$	
		mā te tuhi i te otinga o tētahi whakawehenga e whai toenga ana hei hautau. Hei tauira: $24 \div 5 = \frac{24}{5} = 4\frac{4}{5}$	

Te Ekenga Panuku a te Ākonga: Te Whenu Tau

Kaupae: 7 – 8		Ingoa:	
E ako ana ahau...		Ngā kōrero aromatawai	
Mātauranga	ki te whiriwhiri	i te tauwehe pātahi nui rawa, me te taurea pātahi iti rawa. Hei tauira: Ko te 6 te tauwehe pātahi nui rawa atu o te 24 me te 42.	
	i ngā huringa hautau ←→ tau ā-ira ←→ ūrau	mō ngā haurua, ngā hautoru, ngā hauwhā, ngā haurima, ngā hauwaru, ngā hautekau. Hei tauira: $\frac{3}{5} = 0.6 = 60\%$	
	ki te whakaputa wawe	i te maha o ngā hautekau, ngā haurau me ngā haumano kei roto i tētahi tau ā-ira. Hei tauira: E 2,370 ngā haumano kei roto i te 2.37.	
	ki te raupapa hautau	mēnā he rerekē te tauraro. Hei tauira: $\frac{2}{5} < \frac{7}{16} < \frac{1}{2}$	
Rautaki	ki te whakaoti rapanga e whai wāhi mai ana te honohono ūwehenga	mā te whakamahi i te toharite. Hei tauira: Ko te hononga o te 25% o te 36 me te 75% o te 24 = 27 o roto i te 60, arā, te 45% o te 60.	
	ki te whakaoti rapanga whakarea, rapanga whakawehi hoki, e whai wāhi mai ana te hautau me te tau ā-ira	mā te wāwāhi uara tū, te huri kōaro, tae atu ki te tau māmā me te tikanga paremata. Hei tauira: $0.7 \times 3.9 = (0.7 \times 3.0) + (0.7 \times 0.9)$	

		mā te whakamahi tauraro ōrite. Hei tauira: $\frac{2}{3} \div \frac{1}{4} = \frac{8}{12} \div \frac{3}{12} = 2\frac{2}{3}$	
		mā te huri hautau \leftrightarrow tau ā-ira \leftrightarrow ūrau. Hei tauira: $80\% \text{ o te } 53 = 8 \times \frac{1}{10} \text{ o te } 53 = 8 \times 5.3$	
Rautakī	ki te whakaoti rapanga e whai wāhi mai ana te hautau, te ūwehenga me te pāpātanga	mā te whakamahi i te pānga riterite i roto ūwehenga, i waenga ūwehenga hoki. Hei tauira: $\begin{array}{rcl} \cancel{}^{\div 4}(8 : 12) & = & \square : 21 \\ \cancel{}^{\times 7}(2 : 3) & & \cancel{}^{\div 4}(\cancel{}^{\times 7}\square : 21) \\ \cancel{}^{\times 7}(\cancel{}^{\times 2}14) & = & \cancel{}^{\times 2}21 \end{array}$	
		mā te wāwāhi hautau, ūrau rānei. Hei tauira: $85\% \text{ o te } 36 \rightarrow 10\% \text{ o te } 36 = 3.6$ $5\% \text{ o te } 36 = 1.8$ Nō reira: $85\% \text{ o te } 36 = 36 - 3.6 - 1.8$	



Wāhangā 6

He Kōwae Ako*



Te Panuku o ngā Kaupae: 0 – 1

Te Rautaki Paheko: Te Tāpiri me te Tango

Ngā Whāinga Paetae: Te Tau, Taumata 1

Mahere Tau	0	1	2	3	4	5	6	7	8
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1.1 (Mātauranga Tau)

Ka mōhio ki ngā tauotī 0–100: te whakaingoa i ngā tohutau; ngā raupapa tatauranga whakamua, whakamuri hoki; ngā tikanga uara tū; te 5 me ngā tauhono; ngā tauhono o te 10; te 10 me ngā tauhono; ngā tau ngahuru; te maha o ngā tekau me ngā tahi kei roto i tētahi tau; te rahi me te hanga o tētahi tau.

1.3 (Rautaki Tau)

Ka whakaoti rapanga e whai wāhi mai ana te tauotī me te hautau māmā, ka whakamārama hoki i te rautaki: rautaki tatau; rautaki whakarōpū; rautaki tohatoha ōrite.

Te Mātauranga	Ngā Rauemi e Hāngai ana
E mōhio ana ki ngā tohutau mai i te 0 ki te 10.	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Whāriki Tohutau (wh.28) • Anga Tekau (wh.30) • Kōwhiuwhiu Tau (wh.36) <p><i>Ngā Rauemi o te BSM:</i></p> <p>2-1-23, 2-1-41, 2-1-42, 2-1-82, 2-3-6, 2-3-82, 3-1-7, 3-1-23, 3-3-6, 3-3-7, 3-3-46, 4-1-3, 4-1-4, 4-1-6, 4-1-43, 4-1-46, 4-1-49, 4-1-50, 4-1-82, 4-1-83, 4-3-8, 4-3-9</p>
Ka whakahua i te raupapa whakamua, whakamuri hoki o ngā tau, 0–10.	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Tatauria (wh.6) • Whakaaturia ki te Rārangi Tau (wh.18) <p><i>Ngā Rauemi o te BSM:</i></p> <p>2-1-1, 2-1-2, 2-1-4, 2-1-21, 2-1-84, 2-3-8, 2-3-24, 3-1-2, 3-1-21, 3-1-22, 3-3-22, 4-1-48</p>
Ka kōrero i te tau ki mua, ki muri hoki i tētahi tau (0–10).	
Ka raupapa i ngā tau, 0–10.	
Ka mōhio ki ngā tauira o te rima (pērā i ngā tauira matimati).	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Takirima (wh.76)

Ngā Rautaki	Te Panuku o ngā Rapanga	Ngā Rauemi e Hāngai ana
Ka tatauria te maha o ngā mea o roto i tētahi huinga (1–10).	<p>E hia ngā mea kei konei ..?</p> <p>3, 6, 5, 9, 4, 8, 10, 7</p> <p>E hia katoa ngā mea kei konei ..? (kia rua ngā huinga)</p> <p>2 me te 1</p> <p>3 me te 2</p> <p>1 me te 4</p>	<p><i>TPT, Pukapuka 5:</i></p> <ul style="list-style-type: none"> • He Aha te Tohutau? (wh.12) • Kia Rite! (wh.13) • Tatau Haere (wh.14) • Oro Whakataka (wh.15) • Tokohia? (wh.16) • Kia Kaha, kia Mārire (wh.17) • Tārere (wh.18)

	<p>3 me te 3 5 me te 2 2 me te 2 5 me te 5 3 me te 4</p>	<ul style="list-style-type: none"> • Ki Mua, ki Muri (wh.19) • Pakipaki (wh.20) • Hikoia ngā Tau (wh.21) • Raupapahia 1 (wh.22) • Pīroria te Mataono Tau (wh.24) • E Hia? (wh.25) <p><i>Ngā Rauemi o te BSM:</i> 2-1-5, 3-1-3, 3-1-4, 3-1-5, 3-1-44, 3-1-45, 3-1-46, 3-1-47, 3-1-48, 3-1-49, 3-1-82, 3-3-48, 3-3-49, 4-1-23, 4-3-21, 4-3-44, 4-3-46, 5-1-7.</p>
Ka hangaia tētahi huinga (1–10).	<p>Whakarōpūngia, kia [3] ngā porotiti ki konei ... 3, 5, 10, 7, 4, 8, 6, 11, 13</p>	<p><i>TPT, Pukapuka 5:</i></p> <ul style="list-style-type: none"> • Waewae Anuhe (wh.26) • He Raupua (wh.27) • Whāngaiā te Arewhana (wh.28) • Keke Huritau (wh.29) • Uhia te Honu (wh.30) • Ki te Tekau (wh.31)

Ngā Whāinga Paetae: Te Tau, Taumata 1

Mahere Tau | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8

1.1 (Mātauranga Tau)

Ka mōhio ki ngā tauoti 0–100: te whakaingoa i ngā tohutau; ngā raupapa tatauranga whakamua, whakamuri hoki; ngā tikanga uara tū; te 5 me ngā tauhono; ngā tauhono o te 10; te 10 me ngā tauhono; ngā tau ngahuru; te maha o ngā tekau me ngā tahi kei roto i tētahi tau; te rahi me te hanga o tētahi tau.

1.3 (Rautaki Tau)

Ka whakaotī rapanga e whai wāhi mai ana te tauoti me te hautau māmā, ka whakamārama hoki i te rautaki: rautaki tatau; rautaki whakarōpū; rautaki tohatoha ōrite.

Te Mātauranga	Ngā Rauemi e Hāngai ana	
Ka tautuhia ngā tau katoa, 0–20.	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> Whāriki Tohutau (wh.28) 	
Ka mōhio ki ngā tauira tau (0–10), pērā i ngā tauira matimati me ngā tauira o te anga tekau.	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> Takirima (wh.76) 	
Ka whakahuatia te raupapatanga tau whakamua, whakamuri hoki, 0–20.	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> Tatauria (wh.6) Whakaaturia ki te Rārangi Tau (wh.18) <p><i>Ngā Rauemi o te BSM:</i> 4-1-22, 4-3-23, 4-3-24, 4-3-25, 4-3-44, 4-3-45, 4-3-46, 4-3-47, 4-3-48, 4-3-51, 4-3-81, 4-3-84, 5-1-6, 5-1-7, 5-1-8, 5-1-21, 5-1-22, 5-1-23, 5-1-42, 5-1-43, 5-1-45, 5-1-46, 5-1-47, 5-1-82, 5-1-83, 5-3-4, 5-3-5, 5-3-7, 5-3-8, 5-3-22, 5-3-23, 5-3-45, 5-3-46, 5-3-49, 5-3-50, 5-3-52, 5-3-53, 5-3-54, 5-3-55, 5-3-82, 5-3-84, 6-1-21, 6-1-5, 6-1-6, 6-1-7, 6-1-42, 6-1-44, 6-1-45, 6-1-46, 6-1-81, 6-1-82, 6-3-3, 7-1-1, 7-1-41, 7-1-81, 7-3-4, 10-3-7, 10-3-48, 10-3-49, 10-3-50, 10-3-51</p>	
Ka raupapahia ngā tau, 0–20.	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> Tatauria (wh.6) Whakaaturia ki te Rārangi Tau (wh.18) <p><i>Ngā Rauemi o te BSM:</i> 7-1-2, 7-1-3, 7-1-43, 7-1-44, 7-1-45, 7-1-46, 7-1-82</p>	
Ngā Rautaki	Te Panuku o ngā Rapanga	Ngā Rauemi e Hāngai ana
Ka tatauria ngā mea katoa o ngā huinga taonga ūkiko hei whakaotī tāpiritanga, tangohanga hoki (ki te 10).	$2 + 3 = 5$ $1 + 4 = 5$ $3 + 4 = 7$ $5 + 5 = 10$ $2 + 5 = 7$ $6 + 3 = 9$ $8 + 5 = 13$ $9 + 6 = 15$	<p><i>TPT, Pukapuka 5:</i></p> <ul style="list-style-type: none"> Porotiti Tāpiri, Porotiti Tango (wh.34) He Tāpiri, he Tango Matimati (wh.36) Ngaku Pi Huripoki (wh.40)

<p>Ka whakamahia he taonga ōkiko hei whakaoti rapanga tango, mā te wāwāhi huinga, me te tatau (0–20).</p>	$4 - 2 = 2$ $6 - 4 = 2$ $5 - 4 = 1$ $7 - 3 = 4$ $9 - 5 = 4$ $8 - 6 = 2$ $12 - 3 = 9$ $15 - 5 = 10$	<p><i>TPT, Pukapuka 5:</i></p> <ul style="list-style-type: none"> • He Tau Māmā te Rima (wh.41) • Whakawhitia ngā Ringaringa (wh.43) • Tekau mā Hia ngā Matimati? (wh.45) <p><i>Ngā Rauemi o te BSM:</i></p> <p>4-1-5, 4-3-5, 4-3-6, 4-3-21, 4-4-22, 4-3-44, 4-3-46, 4-3-84, 5-1-3, 5-1-5, 5-1-41, 5-3-6, 5-3-48, 5-3-83, 6-1-2, 6-1-3, 6-1-4, 6-1-9, 6-1-43, 6-1-47, 7-1-42</p>
<p>Ka whakarōpūngia ngā tekau, hei tatau i ngā huinga taonga ōkiko (ki te 50).</p>	$17 = e\ 1$ te tekau me ngā tahi e 7 $25 = e\ 2$ ngā tekau me ngā tahi e 5 $32 = e\ 3$ ngā tekau me ngā tahi e 2 $49 = e\ 4$ ngā tekau me ngā tahi e 9	<p><i>TPT, Pukapuka 5:</i></p> <ul style="list-style-type: none"> • Ngā Rōpū o te Tekau (wh.46)

Ngā Whāinga Paetae: Te Tau, Taumata 1

Mahere Tau	0	1	2	3	4	5	6	7	8
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1.1 (Mātauranga Tau)

Ka mōhio ki ngā tauotī 0–100: te whakaingoa i ngā tohutau; ngā raupapa tatauranga whakamua, whakamuri hoki; ngā tikanga uara tū; te 5 me ngā tauhono; ngā tauhono o te 10; te 10 me ngā tauhono; ngā tau ngahuru; te maha o ngā tekau me ngā tahi kei roto i tētahi tau; te rahi me te hanga o tētahi tau.

1.3 (Rautaki Tau)

Ka whakaoti rapanga e whai wāhi mai ana te tauotī me te hautau māmā, ka whakamārama hoki i te rautaki: rautaki tatau; rautaki whakarōpū; rautaki tohatoha ōrite.

Te Mātauranga	Ngā Rauemi e Hāngai ana	
Ka tautuhia ngā tau katoa, 0–20.	<i>Ngā Rauemi o te BSM:</i> 2-1-5, 6-1-7, 6-1-9, 6-3-2, 6-3-3, 6-3-4, 6-3-5, 6-3-6, 6-3-7, 6-3-22, 6-3-43, 6-3-44, 6-3-45, 6-3-46, 6-3-49, 6-3-50, 6-3-81, 6-3-83, 7-1-1, 7-1-2, 7-1-41, 7-1-42, 7-1-43, 7-3-4, 7-3-9, 7-3-45, 7-4-46, 8-1-4, 8-1-43, 8-1-44, 8-1-53, 11-1-6, 11-1-47, 11-1-82	
Ka whakahuatia te raupapatanga tau whakamua, whakamuri hoki, 0–20.	<i>TPT, Pukapuka 4:</i> <ul style="list-style-type: none"> • Tatauria (wh.6) • Whakaaturia ki te Rārangī Tau (wh.18) 	
Ka raupapahia ngā tau, 0–20.	<i>Ngā Rauemi o te BSM:</i> 7-1-4, 7-1-5, 7-1-46, 7-1-48, 7-1-81, 7-1-82, 7-3-3, 7-3-44, 8-1-6, 8-3-3, 8-3-4, 8-3-5, 8-3-44, 8-3-45, 8-3-46	
Ka mōhio ki ngā meka tāpiritanga, tangohanga hoki ki te 5 me ngā meka rearua ki te 10.	<i>Ngā Rauemi o te BSM:</i> 7-1-49, 7-1-50, 7-1-51, 7-1-83, 8-1-5, 8-1-7, 8-1-46, 8-1-47, 8-1-48, 8-1-49, 8-1-82, 9-1-6, 9-1-12, 9-1-13, 9-1-43, 9-1-44, 9-1-50, 9-1-51, 9-1-52, 9-1-53, 9-1-54, 9-1-85, 9-1-86	
Ngā Rautaki	Te Panuku o ngā Rapanga	Ngā Rauemi e Hāngai ana
Ka tatau ā-hinengaro i ngā mea katoa o ngā huinga e rua e tāpiria ana (ki te 20).	$4 + 3 = \square$ $5 + 2 = \square$ $6 + 1 = \square$ $8 + 4 = \square$ $2 + 6 = \square$ $3 + 7 = \square$ $8 + 5 = \square$ $16 + 2 = \square$	<i>TPT, Pukapuka 5:</i> <ul style="list-style-type: none"> • Te Ringa Kotahi (wh.49) • Te Anga Tekau (wh.51) • Ngā Ringa e Rua (wh.52) • He Matimati Maha (wh.59) • Kawea ki te Rima, ki Tua atu (wh.63) <i>Ngā Rauemi o te BSM:</i> 6-1-9, 6-1-46, 6-1-47, 6-1-81, 6-1-82, 6-3-7, 6-3-8, 6-3-49, 6-3-82, 6-3-84, 7-1-6, 7-1-52, 7-1-53, 7-1-84, 7-1-85, 7-3-4, 7-3-7, 7-3-50, 7-3-51, 7-3-52, 7-3-82, 8-1-5, 8-1-9, 8-1-51, 8-1-52, 8-1-83, 8-1-84, 8-3-7, 8-3-9, 8-3-50, 8-3-51, 10-1-3, 10-1-42, 10-1-82, 11-1-10, 11-1-11, 11-1-54, 11-1-55, 11-1-56, 11-1-85

<p>Ka tatau ā-hinengaro hei whakaoti rapanga tango, tae atu ki te 20 hei tau tīmatanga.</p>	$5 - 3 = \square$ $6 - 2 = \square$ $8 - 4 = \square$ $10 - 3 = \square$ $12 - 5 = \square$ $15 - 3 = \square$ $18 - 4 = \square$ $13 - 4 = \square$	<p><i>TPT, Pukapuka 5:</i></p> <ul style="list-style-type: none"> • Te Ringa Kotahi (wh.49) • Te Anga Tekau (wh.51) • Ngā Ringa e Rua (wh.52) • Te Whakaahua ā-Hinengaro me te Anga Tekau (wh.54) • E Hia kei te Huna? (wh.58) • He Matimati Maha (wh.59) • Kawea ki te Rima, ki Tua atu (wh.63) <p><i>Ngā Rauemi o te BSM:</i> 8-1-10, 8-1-53, 8-1-85, 8-3-8, 8-3-9, 9-1-14, 9-1-15, 9-1-16, 9-1-55, 9-1-56, 10-1-2, 10-1-41, 10-1-81</p>
<p>Ka tatau ā-hinengaro i ngā tau ngahuru hei whakaoti rapanga tāpiri, rapanga tango hoki.</p>	$2 + 2 = \square$, nō reira, $20 + 20 = \square$ $5 + 5 = \square$, nō reira, $50 + 50 = \square$ $3 + 4 = \square$, nō reira, $30 + 40 = \square$ $5 - 3 = \square$, nō reira, $50 - 30 = \square$ $8 - 4 = \square$, nō reira, $80 - 40 = \square$	<p><i>TPT, Pukapuka 5:</i></p> <ul style="list-style-type: none"> • Tekau ngā Rare ki te Pākete Kotahi (wh.65)

Ngā Whāinga Paetae: Te Tau, Taumata 1

Mahere Tau | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8

1.1 (Mātauranga Tau)

Ka mōhio ki ngā tauotī 0–100: te whakaingoa i ngā tohutau; ngā raupapa tatauranga whakamua, whakamuri hoki; ngā tikanga uara tū; te 5 me ngā tauhono; ngā tauhono o te 10; te 10 me ngā tauhono; ngā tau ngahuru; te maha o ngā tekau me ngā tahi kei roto i tētahi tau; te rahi me te hanga o tētahi tau.

1.3 (Rautaki Tau)

Ka whakaoti rapanga e whai wāhi mai ana te tauotī me te hautau māmā, ka whakamārama hoki i te rautaki: rautaki tatau; rautaki whakarōpū; rautaki tohatoha ūrite.

Te Mātauranga

Ka mōhio ki te tikanga o ngā kupu e pā ana ki te hautau, pērā i te wāhanga ūrite, te tohatoha ūrite, te rahinga ūrite, te haurua, te hauwhā, ākene ko te hauwaru hoki.

Hei kimi i ngā hautanga āhua: te poikere, te ngaku pepa, te porowhita, te tapawhā hāngai, te pouaka ...

Hei kimi i ngā hautanga inenga: te ngaku pepa (roa), te ipu wai (rōrahi), te papa o te tēpu (horahanga) ...

Hei kimi i te hautanga huinga: te huinga porotiti, te huinga kōhatu ...

Ngā Rautaki	Te Panuku o ngā Rapanga	Ngā Rauemi e Hāngai ana
<p>Ka mahi ā-ringa ki te whiriwhiri i te haurua me te hauwhā o ētahi āhua, o ētahi inenga rānei. Hei tauira:</p> <ul style="list-style-type: none"> • ko te $\frac{1}{4}$ o tētahi porowhita; • ko te $\frac{1}{2}$ o tētahi ipu wai. <p>Ka whiriwhiri i te haurua me te hauwhā o ngā huinga taonga, tae atu ki te 20.</p>	<p>Whakaarohipia ētahi āhua, ētahi inenga, ētahi taonga rānei hei kimi mā ngā ākonga i ngā haurua me ngā hauwhā.</p> <p>Whakawhitiwhiti kōrero mō te hangarite, te ūrite o ngā wāhanga, me te ūrite o te tohatoha.</p> <p>Mā te pouako e tuhi ngā tohu mō te haurua me te hauwhā (ākene pea ko te hauwaru hoki) me te whakamārama i te tikanga o te taurunga me te tauraro.</p>	<p><i>TPT, Pukapuka 7:</i> • Tohatoha ūrite (wh.16)</p> <p><i>Ngā Rauemi o te BSM:</i> 6-2-9, 6-2-48, 7-2-7, 7-2-48, 7-2-49, 7-2-82, 8-2-8, 8-2-47, 9-2-48, 8-2-83, 8-3-6, 8-3-47, 8-3-49, 8-3-82</p>

Ngā Whāinga Paetae: Te Tau, Taumata 1

Mahere Tau	0	1	2	3	4	5	6	7	8
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1.1 (Mātauranga Tau)

Ka mōhio ki ngā tauotī 0–100: te whakaingoa i ngā tohutau; ngā raupapa tatauranga whakamua, whakamuri hoki; ngā tikanga uara tū; te 5 me ngā tauhono; ngā tauhono o te 10; te 10 me ngā tauhono; ngā tau ngahuru; te maha o ngā tekau me ngā tahi kei roto i tētahi tau; te rahi me te hanga o tētahi tau.

1.3 (Rautaki Tau)

Ka whakaotī rapanga e whai wāhi mai ana te tauotī me te hautau māmā, ka whakamārama hoki i te rautaki: rautaki tatau; rautaki whakarōpū; rautaki tohatoha ōrite.

Te Mātauranga	Ngā Rauemi e Hāngai ana
Ka tautuhia ngā tau katoa, 0–100.	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Whāriki Tohutau (wh.28) • Ngā Tauhono me te Tekau, ngā Tau Ngahuru (wh.32) <p><i>Ngā Rauemi o te BSM:</i></p> <p>8-1-45, 8-1-81, 9-1-4, 9-1-5, 9-1-6, 9-1-42, 9-1-82, 12-1-1</p>
Ka whakahuatia te raupapatanga tau whakamua, whakamuri hoki, 0–100, me te mōhio ki te hononga o te tatau, ki te tāpiri, ki te tango rānei i te tahi.	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Tatauria (wh.6) • Te Tau ki Mua, te Tau ki Muri (wh.13) • Tātaitai (wh.15) • Te Paparau me te Pukamano (wh.21) • Kōwhiuwhiu Tau (wh.36) <p><i>Ngā Rauemi o te BSM:</i> 9-1-4, 9-1-42, 9-3-9</p>
Ka raupapahia ngā tau, 0–100.	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Raupapahia ngā Kāri (wh.10) • Kāri Pere (wh.11) • Raupapahia (wh.17) • Whakaaturia ki te Rārangī Tau (wh.18) • He Aha te Tau? (wh.19) • He Aho Pirepire (wh.23) • Te Tau Nui Rawa Atu (wh.25) <p><i>Ngā Rauemi o te BSM:</i></p> <p>9-3-51, 9-3-52, 10-1-4, 11-1-4, 11-1-5, 11-1-43, 11-1-44, 11-1-45, 11-1-46, 11-3-6, 11-3-7, 11-3-46, 11-3-47, 11-3-48, 11-3-83</p>
Ka mōhio ki ngā meka tāpiritanga, tangohanga hoki ki te 5 me ngā meka rearua ki te 10.	
E mōhio ana ki te pūmau o te maha o ngā mea i tētahi huuinga, ahakoa te āhua o te noho o aua mea.	

Ka mōhio ki ngā meka tāpiritanga ki te 10, me ngā tauhono o te 10. Hei tauira: $3 + 7 = 10$, $10 - 6 = 4$, $10 + 8 = 18$	<i>TPT, Pukapuka 4:</i> • Ki te Tekau (wh.100) • He Anga Tekau (wh.107) • Ngā Tauhono o te Tekau (wh.109) • Whārite Tāpiritanga (wh.115) <i>Ngā Rauemi o te BSM:</i> 9-1-9, 9-1-10, 9-1-47, 9-1-48, 9-3-11, 9-3-12, 9-3-54, 10-1-3, 10-3-46, 11-3-8, 11-3-9, 11-3-49, 11-3-50, 11-3-51	
Ka mōhio ki ngā tau rearua ki te 20, pērā i te $7 + 7 = 14$.	<i>TPT, Pukapuka 4:</i> • Rearua (wh.102) <i>Ngā Rauemi o te BSM:</i> 10-1-6, 10-1-47, 10-1-48, 10-1-83	
Ka mōhio ki ngā tekau kei roto i tētahi tau ngahuru.	<i>TPT, Pukapuka 4:</i> • Huria te Tau (wh.87) • Honohono Tau (wh.106) <i>Ngā Rauemi o te BSM:</i> 9-1-9, 9-1-10, 9-1-47, 9-1-48, 10-1-5, 10-1-45, 10-1-46, 11-1-12	
Ka mōhio ki ngā tauhono ngahuru o te 100.	<i>Ngā Rauemi o te BSM:</i> 9-3-8, 9-3-49, 9-3-50	
Ngā Rautaki	Te Panuku o ngā Rapanga	Ngā Rauemi e Hāngai ana
Ka tatau ake ā-hinengaro hei whakaoti tāpiritanga (ki te 100): • te whiriwhiri i te otinga $36 + 7 = \square$ • te whiriwhiri i te tau tīmatanga $\square + 6 = 81$ • te whiriwhiri i te tau tāpiri $25 + \square = 33$	$9 + 2 = \square$ $8 + 4 = \square$ $14 + 3 = \square$ $25 + 4 = \square$ $99 + 5 = \square$ $77 + 4 = \square$ $8 + \square = 11$ $15 + \square = 19$ $67 + \square = 72$ $89 + \square = 96$ E hia te rahinga ake o te 14 i te 8? E hia te rahinga ake o te 33 i te 27? E hia te rahinga ake o te 74 i te 69?	<i>TPT, Pukapuka 5:</i> • Papariki Tau (wh.67) • Ngaku Tau (wh.69) • Ruku Pāua (wh.71) • Poraka Pekepeke (wh.73) • Tatau ake i te Tau Nui (wh.76) • Tatau ake (wh.78) <i>Ngā Rauemi o te BSM:</i> 7-1-53, 9-1-11, 9-1-49, 10-1-7, 10-1-49, 10-1-50, 10-1-51
Ka tatau ā-hinengaro whakamuri hei whakaoti rapanga tango, tae atu ki te 100 hei tau tīmatanga.	$12 - 3 = \square$ $14 - 5 = \square$ $23 - 4 = \square$ $41 - 2 = \square$ $67 - 5 = \square$	<i>TPT, Pukapuka 5:</i> • Tatau Whakamuri (wh.80) <i>Ngā Rauemi o te BSM:</i> 9-3-13, 9-3-14, 9-3-55, 9-3-56, 9-3-57, 9-3-58, 9-3-59, 9-3-85, 10-1-8, 10-1-52, 10-1-53

	$72 - 6 = \square$ $12 - \square = 9$ $24 - \square = 19$ $67 - \square = 58$ $94 - \square = 89$ E hia te itinga ake o te 16 i te 21? E hia te itinga ake o te 39 i te 43? E hia te itinga ake o te 74 i te 80?	
Ka whakamahi rauemi uara tū hei whakaoti rapanga tāpiri, rapanga tango hoki e whai wāhi mai ana ngā rōpū o te tekau.	$40 + 20 = \square$ $70 - 50 = \square$ $60 + 30 = \square$ $90 - 20 = \square$ $42 + 30 = \square$ $75 - 20 = \square$ $54 - \square = 24$ $27 + \square = 57$ $36 + \square = 76$ $94 - \square = 54$	<i>TPT, Pukapuka 5:</i> <ul style="list-style-type: none"> • Tāpiria he Tau Ngahuru (wh.82) • Tangohia he Tau Ngahuru (wh.84) • Ngā Tekau me ngā Tahi e Ngaro ana (wh.93) • Te Pukamano (wh.95)

Ngā Whāinga Paetae: Te Tau, Taumata 1

Mahere Tau | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8

1.1 (Mātauranga Tau)

Ka mōhio ki ngā tauotī 0–100: te whakaingoa i ngā tohutau; ngā raupapa tatauranga whakamua, whakamuri hoki; ngā tikanga uara tū; te 5 me ngā tauhono; ngā tauhono o te 10; te 10 me ngā tauhono; ngā tau ngahuru; te maha o ngā tekau me ngā tahi kei roto i tētahi tau; te rahi me te hanga o tētahi tau.

1.3 (Rautaki Tau)

Ka whakaoti rapanga e whai wāhi mai ana te tauotī me te hautau māmā, ka whakamārama hoki i te rautaki: rautaki tatau; rautaki whakarōpū; rautaki tohatoha ōrite.

Te Mātauranga	Ngā Rauemi e Hāngai ana	
Ka whakahuatia te raupapatanga tatau whakamua, whakamuri hoki, mawhiti-rua, mawhiti-rima, mawhiti-tekau (0–100).	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Tatauria (wh.6) • Ararā! (wh.9) • Tātaitai (wh.15) <p><i>Ngā Rauemi o te BSM:</i> 10-1-4, 10-1-44, 10-1-43</p>	
Ka whakaputa wawe i ngā rōpū o te rua kei roto i ngā tau, tae atu ki te 20.	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Ararā! (wh.9) <p><i>Ngā Rauemi o te BSM:</i> 8-1-8, 8-1-50, 9-3-10, 9-3-53</p>	
Ngā Rautaki	Te Panuku o ngā Rapanga	Ngā Rauemi e Hāngai ana
Ka tatau mawhiti-rua, mawhiti-rima, mawhiti-tekau hei whakaoti rapanga whakarea.	$2 \times 4 \rightarrow 2, 4, 6, 8$ $2 \times 7 \rightarrow 2, 4, 6, 8, 10, 12, 14$ $5 \times 3 \rightarrow 5, 10, 15$ $5 \times 8 \rightarrow 5, 10, 15, 20, 25, 30, 35, 40$ $10 \times 6 \rightarrow 10, 20, 30, 40, 50, 60$ $4 \times 5 \rightarrow 2, 4, 6, 8, 10, 12, 14, 16, 18, 20$ $4 \times 5 \rightarrow 5, 10, 15, 20$	<p><i>TPT, Pukapuka 6:</i></p> <ul style="list-style-type: none"> • He Ngaku Tau (wh.14) <p><i>Ngā Rauemi o te BSM:</i> 11-3-54, 11-3-55</p>
Ka whakaoti rapanga whakawehē mā te tohatoha ōrite i ngā rōpū o te tahi, o te rua me te rima.	$10 \div 2 = 5$ $20 \div 4 = 5$ $14 \div 2 = 7$ $9 \div 3 = 3$ $12 \div 4 = 3$ $15 \div 3 = 5$ $25 \div 5 = 5$ $16 \div 4 = 4$	<p><i>TPT, Pukapuka 6:</i></p> <ul style="list-style-type: none"> • Mā te Rua, mā te Rima, mā te Tekau (wh.35)

Ngā Whāinga Paetae: Te Tau, Taumata 1

Mahere Tau	0	1	2	3	4	5	6	7	8
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1.1 (Mātauranga Tau)

Ka mōhio ki ngā tauoti 0–100: te whakaingoa i ngā tohutau; ngā raupapa tatauranga whakamua, whakamuri hoki; ngā tikanga uara tū; te 5 me ngā tauhono; ngā tauhono o te 10; te 10 me ngā tauhono; ngā tau ngahuru; te maha o ngā tekau me ngā tahi kei roto i tētahi tau; te rahi me te hanga o tētahi tau.

1.2 Ka mōhio ki ngā hautau māmā, pērā i ngā haurua me ngā hauwhā: te tuhi i ngā tohu hautau; te tikanga o te taurunga me te tauraro; te raupapa hautau māmā; te whakatauira i te hautau (pērā i te hurihangā $\frac{3}{2}$).

1.3 (Rautaki Tau)

Ka whakaotī rapanga e whai wāhi mai ana te tauoti me te hautau māmā, ka whakamārama hoki i te rautaki: rautaki tatau; rautaki whakarōpū; rautaki tohatoha ōrite.

Te Mātauranga	Ngā Rauemi e Hāngai ana	
<p>Ka mōhio ki te tikanga o ngā kupu e pā ana ki te hautau, pērā i te wāhangā ōrite, te tohatoha ōrite, te rahinga ōrite, te taurunga, te tauraro, te haurua, te hauwhā, ā, ka whakawhānuihia ake ki ngā hauwaru, ngā hau-tekau mā ono, ngā hautekau, ngā hautoru, ngā haurima me ngā hauono.</p> <p>Hei kimi i ngā hautanga āhua: te poikere, te ngaku pepa, te porowhita, te tapawhā hāngai, te pouaka ...</p> <p>Hei kimi i ngā hautanga inenga: te ngaku pepa (roa), te ipu wai (rōrahi), te papa o te tēpu (horahanga) ...</p> <p>Hei kimi i te hautanga huinga: te huinga porotiti, te huinga kōhatu ...</p>		
<p>Ka mōhio ki ngā tohu mō ngā haurua, ngā hauwhā, ngā hautoru me ngā haurima.</p>	<p><i>TPT, Pukapuka 4:</i> <ul style="list-style-type: none"> • He Wehenga Hautanga (wh.54) • Te Hautau ki te Papa Tīrau 1 (wh.56) <p><i>Ngā Rauemi o te BSM:</i> 9-2-18, 9-2-61, 9-2-85, 11-2-59</p> </p>	
<p>Ka mōhio ki ngā tau rearua, tae atu ki te 20. Hei tauira, $7 + 7 = 14$.</p>	<p><i>TPT, Pukapuka 4:</i> <ul style="list-style-type: none"> • Rearua (wh.102) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuatahi, Taumata 2:</i> <ul style="list-style-type: none"> • He Ringa Āwhina (wh.3) <p><i>Ngā Rauemi o te BSM:</i> 10-1-6, 10-1-47, 10-1-48, 10-1-83</p> </p></p>	
Ngā Rautaki	Te Panuku o ngā Rapanga	
<p>Ka whiriwhiri i ngā hautanga māmā o ngā āhua me ngā inenga roa. Ko ngā haurua me ngā hauwhā i te tuatahi, kātahi ka whānui haere ki ngā hauwaru, ngā hautoru, ngā haurima me ngā hautekau.</p>	<p>Whakaarohipā ētahi āhua, ētahi inenga, ētahi taonga rānei hei kimi mā ngā ākonga i ngā haurua me ngā hauwhā.</p> <p>Whakawhitiwhiti kōrero mō te hangarite, te ūrite o ngā wāhangā me te ūrite o te tohatoha.</p>	<p><i>TPT, Pukapuka 7:</i> <ul style="list-style-type: none"> • Tohatoha Ūrite (wh.16) <p><i>Ngā Rauemi o te BSM:</i> 9-2-4, 9-2-5, 9-2-45, 9-2-18, 9-2-61, 9-2-85, 10-2-16, 11-1-18, 11-1-59, 11-2-59, 12-2-3, 12-2-4, 12-2-9,</p> </p>

	<p>Ka tuhia ngā tohu mō te haurua me te hauwhā, me te whakamārama i te tikanga o te taurunga me te tauraro.</p> <p>Ka whakawhānuihia ngā mahi kia whai wāhi mai ngā hauwaru, ngā hautoru, ngā haurima me ngā hautekau.</p>	12-2-15, 12-2-44, 12-2-45, 12-2-50, 12-2-51, 12-2-81, 12-2-7, 12-3-49, 12-3-50, 12-3-51, 12-3-83, 12-3-84
<p>Ka whiriwhiria te hautanga o tētahi huingga mā te tohatoha ōrite.</p> <p>Ka whakawhānuihia tēnei rautaki kia whai wāhi mai te tatau māwhitiwhiti me te whakaahua ā-hinengaro. Ka aro ki ngā haurua me ngā hauwhā i te tuatahi, kātahi ki ngā hauwaru, ngā hautoru, ngā haurima me ngā hautekau.</p>	$\frac{1}{2}$ o te 14 = <input type="checkbox"/>	<i>TPT, Pukapuka 7:</i> <ul style="list-style-type: none"> • Ngā kōrero whakataki mō te Kaupae 3-4 (wh.15) • Tohatoha Ōrite (wh.16) <p><i>Ngā Rauemi o te BSM:</i> 9-3-10, 9-3-53, 11-2-18</p>

Ngā Whāinga Paetae: Te Tau, Taumata 2

Mahere Tau	0	1	2	3	4	5	6	7	8
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2.1 (Mātauranga Tau)

Ka mōhio ki ngā tauoti 0–1,000: te whakaingoa i ngā tohutau; ngā raupapa tatauranga whakamua, whakamuri hoki; ngā tikanga uara tū; te maha o ngā tahi, ngā tekau me ngā rau kei roto i tētahi tau; te rahi me te hanga o tētahi tau; ngā tikanga o te taurua me te taukehe.

2.2 (Mātauranga Tau)

Ka mōhio ki ngā rearua tae atu ki te 20 me ngā haurua e whai pānga ana.

2.4 (Rautaki Tau)

Ka whakaotī rapanga e whai wāhi mai ana te tauoti me te hautau, ka whakamārama hoki i te rautaki: rautaki tatau; rautaki whakarōpū; rautaki tohatoha ōrite; rautaki wāwāhi tau tāpiripiri māmā.

2.5 (Rautaki Tau)

Ka mārama ki te whaitakenga o te otinga o tētahi rapanga.

Te Mātauranga	Ngā Rauemi e Hāngai ana
Ka tautuhia ngā tau katoa, 0–1,000.	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Kōwhiuwhiu Tau (wh.36) • He Whare Uara Tū (wh.38)
<p>Ka whakahuatia te raupapatanga tau whakamua, whakamuri hoki, 0–1,000, me te mōhio ki te tatau mawhiti-10, mawhiti-100.</p> <p>Ka whakahuatia te tau, he kotahi, he tekau, he rau rānei, te nui ake, te iti ake rānei.</p>	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Tatauria (wh.6) • Tatau Māwhitiwhiti i te Rārangī Tau (wh.8) • Te Tau ki Mua, te Tau ki Muri (wh.13) • Tātaita (wh.15) • Kōwhiuwhiu Tau (wh.36) <p><i>Ngā Rauemi o te BSM:</i> 10-3-9, 10-3-55, 10-3-56, 12-3-3, 12-3-4, 12-3-81, 12-3-82</p> <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuarua, Taumata 2:</i></p> <ul style="list-style-type: none"> • Kei te Kōwhiuwhiu te Whakaatu (wh.2)
Ka raupapahia ngā tau 0–1,000.	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Raupapahia ngā Kāri (wh.10) • Kāri Pere (wh.11) • Raupapahia (wh.17) • Whakaaturia ki te Rārangī Tau (wh.18) • He Aha te Tau? (wh.19) • Te Paparau me te Pukamano (wh.21) • He Aho Pirepire (wh.23) • Te Tau Nui Rawa Atu (wh.25) <p><i>Ngā Rauemi o te BSM:</i> 10-3-86, 11-3-3, 11-3-42</p>

<p>Ka mōhio ki ngā rōpū o roto i te rau, pērā i te 49 me te 51, me te tino aro ki ngā taurea o te 5, pērā i te 25 me te 75.</p>	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Piki ake, Heke iho (wh.83) • Huria te Tau (wh.87) <p><i>Ngā Rauemi o te BSM:</i> 11-3-4, 11-3-5, 11-3-43, 11-3-44, 11-3-45, 11-3-81, 11-3-82, 12-1-1, 12-1-2, 12-1-41, 12-1-82, 12-1-83</p> <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuatahi, Taumata 2:</i></p> <ul style="list-style-type: none"> • Kei Tēnā Anō Tana Tikanga (wh.2) • Ko Meka Miharo (wh.6) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuarua, Taumata 2:</i></p> <ul style="list-style-type: none"> • He Koura Kōritorito (wh.3) • Kia Eke ki te 100 (wh.4) • Te Peke Pāmamao (wh.12)
<p>Ka mōhio ki te maha o ngā rōpū o te 10 kei roto i tētahi tau mati-toru.</p>	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Anga Pirepire (wh.79) • He Tau Matirua (wh.80)
<p>Ka mōhio ki ngā meka tāpiritanga me ngā meka tangohanga ki te 20.</p>	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Honohono Tau (wh.106) • He Anga Tekau (wh.107) • Aho Pirepire (wh.110) • Raupapatanga Meka Matua (wh.111) • He Ara Paheko Tau (wh.114) • Whārite Tāpiritanga (wh.115) <p><i>Ngā Rauemi o te BSM:</i> 9-3-6, 9-3-7, 9-3-48, 9-3-83, 9-3-84, 10-3-6, 10-3-8, 10-3-10, 10-3-46, 10-3-47, 10-3-52, 10-3-53, 10-3-54, 11-1-8, 11-1-9, 11-1-52, 11-1-53, 11-1-83, 11-1-84, 11-3-52, 11-3-53, 11-3-84, 12-1-7, 12-1-52, 12-1-85, 12-3-2, 12-3-45, 12-3-46, 12-3-47, 12-3-8, 12-3-52, 12-3-53, 12-3-85</p> <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuatahi, Taumata 2:</i></p> <ul style="list-style-type: none"> • Te Whakataetae Poraka (wh.22) <p><i>He Tau Anō Te Tau: Ngā Meka Matua, Taumata 2-3:</i></p> <ul style="list-style-type: none"> • Tāpiri Tere (wh.3) • Tāpirihia (wh.6) • Rua Tekau mā Whitu (wh.15) • Kia Ū, Kia Tika (wh.19) • Tūhono Tapatoru (wh.21) <p><i>He Tau Anō Te Tau: Ngā Meka Matua, Taumata 3:</i></p> <ul style="list-style-type: none"> • Kia Tere Ake, kia Tika Ake (wh.2) • Me Tāpiri, me Tango Rānei (wh.5) • Kia Whā ki te Rārangī (wh.7) • Whāia te Mahere Huānga (wh.8) <p><i>He Tau Anō Te Tau: Ngā Tau, Taumata 2-3:</i></p> <ul style="list-style-type: none"> • Heke Haere (wh.9)

Ka mōhio ki ngā tekau me ngā rau kei roto i tētahi tau matirua, tau matitoru hoki.	<i>TPT, Pukapuka 4:</i> • E Pātata ana ki te 100 (wh.82) • Whakawhitia ngā Paparanga Uara Tū (wh.88)	
Ka whakaawhiwhia ngā tau matitoru ki te tekau, ki te rau rānei e pātata ana.	<i>Ngā Rauemi o te BSM:</i> 12-1-6, 12-1-4	
Ka mōhio ki ngā tau rau takirua ka eke ki te 1,000 te tapeke, pērā i te 400 me te 600.	<i>Ngā Rauemi o te BSM:</i> 12-1-3, 12-1-4, 12-1-42, 12-1-43	
Ka tuhia he pikitia, he whārite hoki hei whakaatu i ngā whiriwhiringa tāpiritanga.	<i>TPT, Pukapuka 4:</i> • E Pātata ana ki te 100 (wh.82)	
Ngā Rautaki	Te Panuku o ngā Rapanga	Ngā Rauemi e Hāngai ana
Ka whakamahi tau rearua hei whakaoti rapanga tāpiri, rapanga tango hoki.	$3 + 3 = \square$, nō reira, $4 + 3 = \square$ $7 + 7 = \square$, nō reira, $7 + 8 = \square$, $6 + 7 = \square$, $14 - 7 = \square$ $8 + 8 = \square$, nō reira, $16 - 7 = \square$, $16 - 9 = \square$, $15 - 8 = \square$ $25 + 25 = \square$, nō reira, $26 + 27 = \square$, $23 + 27 = \square$, $50 - 24 = \square$ $500 + 500 = \square$, nō reira, $503 + 501 = \square$, $498 + 497 = \square$, $501 - 498 = \square$	<i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuatahi, Taumata 2:</i> • He Ringa Āwhina (wh.3) <i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuarua, Taumata 2:</i> • Kāore Tērā e Tika Ana! (wh.15)
Ka whakamahi i ngā rōpū o te rima hei whakaoti rapanga tāpiri, rapanga tango hoki.	$5 + 3 = \square$, nō reira, $4 + 5 = \square$ $5 + 5 = \square$, nō reira, $5 + 6 = \square$, $6 + 7 = \square$, $7 + 8 = \square$ $9 - 5 = \square$, nō reira, $19 - 5 = \square$, $6 + 7 + 5 + 7 = \square$ $25 + 25 = \square$, nō reira, $26 + 27 = \square$, $24 + 26 = \square$ $50 + 50 = \square$, nō reira, $46 + 47 = \square$	<i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuarua, Taumata 2:</i> • Ngā Meka Matimati (wh.8) • Kia Eke ki te Tapeke Tika (wh.11)
Ka whakamahi taurata hei whakaoti rapanga tāpiri.	$4 + 6 = \square$, nō reira, $4 + 6 + 4 + 6 = \square$ $7 + 3 = \square$, nō reira, $7 + 5 + 5 + 3 = \square$ $8 + 4 + 6 + 3 + 2 + 7 = \square$ $2 + 4 + 9 + 6 = \square$ $3 + 8 + 6 + 7 + 2 + 4 = \square$ $50 + 40 + 60 + 50 + 30 = \square$ $4 + 17 + 26 + 3 + 8 = \square$	<i>TPT, Pukapuka 5:</i> • Ki te Tekau (wh.96) • Raupapatanga Paheko Māmā (wh.98)

<p>Ka whakamahia te rautaki ‘kawea ake ki te tekau’ hei whakaoti rapanga tāpiri.</p>	$9 + 6 \rightarrow 10 + 5 = \square$ $6 + 8 \rightarrow 4 + 10 = \square$ $18 + 7 \rightarrow 20 + 5 = \square$ $59 + 8 \rightarrow 60 + 7 = \square$ $6 + 87 \rightarrow 3 + 90 = \square$ $97 + 6 \rightarrow 100 + 3 = \square$ $38 + 298 \rightarrow 36 + 300 = \square$	<p><i>TPT, Pukapuka 5:</i></p> <ul style="list-style-type: none"> • Whakawhitia te Ngahuru (wh.103) • Wāwāhia, ka Tāpiri ai (wh.108) <p><i>Ngā Rauemi o te BSM:</i> 12-1-50, 12-1-51, 12-1-89</p> <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuarua, Taumata 2:</i></p> <ul style="list-style-type: none"> • Ngā Huarahi Tatau (wh.10) • Ka Eke Atu, ka Heke Mai (wh.14) <p><i>He Tau Anō Te Tau: Ngā Meka Matua, Taumata 3:</i></p> <ul style="list-style-type: none"> • He Kararehe Rerekē (wh.1) • He Kohikohi Kāroti (wh.6) <p><i>He Tau Anō Te Tau: Ngā Meka Matua, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • He Pūtoi (wh.1) • Ngā Porotiti Pekepeke (wh.4) • Kia Eke ki te Tekau (wh.11) • Ngā Tapeke Mata (wh.18)
<p>Ka whakamahia te rautaki ‘wāwāhi uara tū’, hei whakaoti rapanga tāpiri, rapanga tango hoki.</p>	$30 + 40 = \square$, nō reira, $34 + 42 = \square$ $50 + 40 = \square$, nō reira, $53 + 43 = \square$, $45 + 55 = \square$ $60 - 30 = \square$, nō reira, $64 - 32 = \square$ $80 - 50 = \square$, nō reira, $84 - 51 = \square$, $88 - 54 = \square$ $30 + 20 + 40 = \square$, nō reira, $32 + 25 + 41 = \square$	<p><i>TPT, Pukapuka 5:</i></p> <ul style="list-style-type: none"> • Tāpiria he Tau Ngahuru (wh.82) • Tangohia he Tau Ngahuru (wh.84) • Tāpiria ngā Tekau me ngā Tahi (wh.87) • Tangohia ngā Tekau me ngā Tahi (wh.90) • Ngā Tekau me ngā Tahi e Ngaro ana (wh.93) • Te Pukamano (wh.95) <p><i>Ngā Rauemi o te BSM:</i> 12-1-9, 12-1-55, 12-1-56, 12-1-86, 12-1-88</p> <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuatahi, Taumata 2:</i></p> <ul style="list-style-type: none"> • Whakatakataka (wh.4) • E Hia te Pakeke? (wh.5) • Ko Meka Miharo (wh.6) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuarua, Taumata 2:</i></p> <ul style="list-style-type: none"> • He Whaiwhai Taniwha (wh.7) • Te Peke Pāmamao (wh.12) <p><i>He Tau Anō Te Tau: Ngā Tau, Taumata 2-3:</i></p> <ul style="list-style-type: none"> • Te Whakamahi Tau (wh.2) • Piki Haere (wh.8)

Ngā Whāinga Paetae: Te Tau, Taumata 2

Mahere Tau	0	1	2	3	4	5	6	7	8
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2.1 (Mātauranga Tau)

Ka mōhio ki ngā tauoti 0–1,000: te whakaingoa i ngā tohutau; ngā raupapa tatauranga whakamua, whakamuri hoki; ngā tikanga uara tū; te maha o ngā tahi, ngā tekau me ngā rau kei roto i tētahi tau; te rahi me te hanga o tētahi tau; ngā tikanga o te taurua me te taukehe.

2.2 (Mātauranga Tau)

Ka mōhio ki ngā rearua tae atu ki te 20 me ngā haurua e whai pānga ana.

2.4 (Rautaki Tau)

Ka whakaotī rapanga e whai wāhi mai ana te tauoti me te hautau, ka whakamārama hoki i te rautaki: rautaki tatau; rautaki whakarōpū; rautaki tohatoha ūrite; rautaki wāwāhi tau tāpiripiri māmā.

2.5 (Rautaki Tau)

Ka mārama ki te whaitakenga o te otinga o tētahi rapanga.

Ngā Whāinga Paetae: Te Tau, Taumata 3

3.1 (Mātauranga Tau)

Ka mōhio ki ngā meka matua mō te tāpiri, te tango me te whakarea.

3.3 (Mātauranga Tau)

Ka kōwhiri, ka whakamārama i te rautaki e tino whaihua ana hei whakaotī rapanga e whai wāhi mai ana te tauoti, te hautau, te tau ā-ira me te ūrau: rautaki tatau; rautaki whakarōpū; rautaki tohatoha ūrite; rautaki tāpiripiri; rautaki whakarea māmā.

Te Mātauranga	Ngā Rauemi e Hāngai ana
Ka whakahuatia te raupapatanga tatau whakamua, whakamuri hoki, mawhiti-rua, mawhiti-toru, mawhiti-rima, mawhiti-tekau (0–1,000).	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Tatauria (wh.6) • Tatau Māwhitiwhiti i te Rārangī Tau (wh.8) • Tātaitai (wh.15) <p><i>He Tau Anō Te Tau: Ngā Tau, Taumata 2-3:</i></p> <ul style="list-style-type: none"> • Ka Pai te Peke Haere (wh.16) <p><i>Ngā Rauemi o te BSM:</i> 1-3-12, 11-3-13, 11-3-54, 11-3-55, 11-3-85, 12-3-13</p>
Ka whakaputa wawe i ngā rōpū o te 2 kei roto i ngā tau ki te 20; ngā rōpū o te 5 kei roto i ngā tau ki te 50; ngā rōpū o te 10 kei roto i ngā tau ki te 100.	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Tatau Māwhitiwhiti i te Rārangī Tau (wh.8) • Ararā! (wh.9) • Takirima (wh.76) • Whakawhitia ngā Paparanga Uara Tū (wh.88) <p><i>Ngā Rauemi o te BSM:</i> 9-1-7, 9-1-8, 9-1-45, 9-1-46, 9-1-83, 9-1-84, 12-1-5, 12-1-44, 12-1-45, 12-1-8</p>
Ka whakaputa wawe i ngā meka whakarea, whakawehe hoki mō te 2, te 5 me te 10.	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Raupapatanga Meka Matua (wh.111) • Whiriwhiria te Paheko (wh.112) • Whārite Whakareatanga (wh.118)

Ka tuhia he pikitia, he whārite hoki hei whakaatu i ngā whiriwhiringa ā-hinengaro mō ngā rapanga whakarea, whakawehe hoki.	<i>He Tau Anō Te Tau: Ngā Meka Matua, Taumata 2-3:</i> • Kua Pau te Wā (wh.8) • He Rā, He Āporo Anō (wh.9)	
Ngā Rautaki	Te Panuku o ngā Rapanga	Ngā Rauemi e Hāngai ana
Ka whakaoti rapanga whakarea, mā te tāpiri tāruarua.	$2 \times 6 = \square$, nō reira, $3 \times 6 = \square$ $4 \times 5 = \square$, nō reira, $5 \times 5 = \square$, $6 \times 5 = \square$ $5 \times 8 = \square$, nō reira, $6 \times 8 = \square$, $7 \times 8 = \square$ $10 \times 4 = \square$, nō reira, $11 \times 4 = \square$, $12 \times 4 = \square$	<i>TPT, Pukapuka 6:</i> • Whakareatia ki te Toru (wh.21) • Tūtohi Tukutuku Kararehe (wh.25) <i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuatahi, Taumata 2:</i> • He Wira, he Waewae (wh.12) • Te Rāhui Poaka (wh.13) <i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuarua, Taumata 2:</i> • Ki te Hokohoko! (wh.16) <i>He Tau Anō Te Tau: Ngā Meka Matua, Taumata 2-3:</i> • He Rā, He Āporo Anō (wh.9) • Piri ki te Huarahi (wh.10) <i>He Tau Anō Te Tau: Ngā Meka Matua, Taumata 3:</i> • Te Tatau Hipi (wh.16)
Ka whakamahia te rautaki ‘te rearua me te haurua’ hei whakaoti whakareatanga ki te 5.	$2 \times 10 = \square$, nō reira, $4 \times 5 = \square$ $4 \times 10 = \square$, nō reira, $8 \times 5 = \square$, $6 \times 5 = \square$ $3 \times 10 = \square$, nō reira, $6 \times 5 = \square$, $7 \times 5 = \square$ $4 \times 5 = \square$, nō reira, $5 \times 5 = \square$ $8 \times 5 = \square$, nō reira, $9 \times 5 = \square$	<i>TPT, Pukapuka 6:</i> • Mā te Rua, mā te Rima, mā te Tekau (wh.35) <i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuarua, Taumata 2:</i> • Whakarea ki te Rua (wh.18)
Ka whakamahia te ‘āhuatanga tātai kōaro’ hei whakaoti whakareatanga. Hei tauira: $4 \times 6 = 6 \times 4$	$5 \times 6 = \square \rightarrow 6 \times 5 = \square$ $9 \times 2 = \square \rightarrow 2 \times 9 = \square$ $10 \times 7 = \square \rightarrow 7 \times 10 = \square$ $100 \times 6 = \square \rightarrow 6 \times 100 = \square$ $50 \times 2 = \square \rightarrow 2 \times 50 = \square$	<i>TPT, Pukapuka 6:</i> • Tūtohi Tukutuku Kararehe (wh.25) • Te Huri Kōaro i te Whakareatanga (wh.58) <i>He Tau Anō Te Tau: Ngā Meka Matua, Taumata 3:</i> • He Tiakarete Tapawhā (wh.10)
Ka whakamahia te rautaki ‘tohatoha ōrite’ hei whakaoti whakawehenga, me te tāpiritanga hei matapae i te otinga.	$10 \div 2 = \square$, nō reira, $20 \div 4 = \square$ $12 \div 2 = \square$, nō reira, $12 \div 4 = \square$ $16 \div 2 = \square$, nō reira, $16 \div 4 = \square$, $16 \div 8 = \square$ $100 \div 2 = \square$, nō reira, $100 \div 4 = \square$	<i>TPT, Pukapuka 6:</i> • Tohaina kia Ōrite (wh.29) <i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuarua, Taumata 2:</i> • Ngā Moko Tuauri (wh.19)

<p>Ka whakaoti rapanga whakawehē mā te hanga rōpū ūrite.</p>	$2 \times \square = 20$, nō reira, $4 \times \square = 20$ $10 \times \square = 30$, nō reira, $5 \times \square = 30$ $2 \times \square = 16$, nō reira, $4 \times \square = 16$ $5 \times \square = 30$, nō reira, $5 \times \square = 60$ $4 \times \square = 16$, nō reira, $8 \times \square = 16$ $4 \times \square = 12$, nō reira, $4 \times \square = 24$	<p><i>TPT, Pukapuka 6:</i></p> <ul style="list-style-type: none"> • Poraka Honohono (wh.32) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuarua, Taumata 2:</i></p> <ul style="list-style-type: none"> • Ngā Moko Tuauri (wh.19)
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Ngā Whāinga Paetae: Te Tau, Taumata 2

Mahere Tau	0	1	2	3	4	5	6	7	8
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2.1 (Mātauranga Tau)

Ka mōhio ki ngā tauoti 0–1,000: te whakaingoa i ngā tohutau; ngā raupapa tatauranga whakamua, whakamuri hoki; ngā tikanga uara tū; te maha o ngā tahi, ngā tekau me ngā rau kei roto i tētahi tau; te rahi me te hanga o tētahi tau; ngā tikanga o te taurua me te taukehe.

2.2 (Mātauranga Tau)

Ka mōhio ki ngā rearua tae atu ki te 20 me ngā haurua e whai pānga ana.

2.3 (Mātauranga Tau)

Ka mōhio ki ngā hautau (pērā i ngā haurua, ngā hautoru, ngā hauwhā, ngā haurima me ngā hautekau: te tuhi i ngā tohu hautau; te tikanga o te taurunga me te tauraro o tētahi hautau; te raupapa hautau māmā me ngā hautau e ūrite ana te tauraro).

2.4 (Rautaki Tau)

Ka whakaoti rapanga e whai wāhi mai ana te tauoti me te hautau, ka whakamārama hoki i te rautaki: rautaki tatau; rautaki whakarōpū; rautaki tohatoha ūrite; rautaki wāwāhi tau tāpiripiri māmā.

2.5 (Rautaki Tau)

Ka mārama ki te whaitakenga o te otinga o tētahi rapanga.

Te Mātauranga	Ngā Rauemi e Hāngai ana
Ka mōhio ki ngā tohu hautau mō ngā haurua, ngā hautoru, ngā hauwhā, ngā haurima, me ngā hautekau, me te whai wāhi mai o ngā hautau nui ake i te tahi.	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • He Wehenga Hautanga (wh.54) • Te Hautau ki te Papa Tīrau 1 (wh.56) • Te Hautau ki te Papa Tīrau 2 (wh.58) • Ngā Hautau Waetahi-kore (wh.59) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuatahi, Taumata 2:</i></p> <ul style="list-style-type: none"> • Wānangahia ngā Wāhanga (wh.21) <p><i>Ngā Rauemi o te BSM:</i> 12-3-51, 12-3-83, 12-3-84</p>
Ka raupapahia ngā hautau e ūrite ana te tauraro, pērā i te $\frac{3}{4}$, te $\frac{1}{4}$ me te $\frac{5}{4}$.	

Ngā Rautaki	Te Panuku o ngā Rapanga	Ngā Rauemi e Hāngai ana
Ka whakamahia ngā meka tāpiritanga me ngā tau rearua hei whiriwhiri i te hautau waetahi o tētahi huinga. Hei tauira: $\frac{1}{4} \text{ o te } 16 - 8 + 8 = 16$, $4 + 4 = 8$	$\frac{1}{2} \text{ o te } 8 = \square$ $\frac{1}{4} \text{ o te } 12 = \square$ $\frac{1}{4} \text{ o te } 20 = \square$ $\frac{1}{8} \text{ o te } 24 = \square$ $\frac{1}{3} \text{ o te } 15 = \square$ $\frac{1}{5} \text{ o te } 25 = \square$	<p><i>TPT, Pukapuka 7:</i></p> <ul style="list-style-type: none"> • Ngā kōrero whakataki mō te Kaupae 4-5 (wh.23) • Kararehe (wh.28) • Manu Hiakai (wh.36) <p><i>Ngā Rauemi o te BSM:</i> 12-3-49, 12-3-50</p> <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuatahi, Taumata 2:</i></p> <ul style="list-style-type: none"> • He Huripoki Hautau (wh.17) • A Keri te Kurī (wh.19) • He Reka ngā Kai (wh.20)

		<p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuarua, Taumata 2:</i></p> <ul style="list-style-type: none"> • Kia Manawareka te Katoa (wh.20) • Te Kimi i ngā Hautau (wh.24) <p><i>He Tau Anō Te Tau: Ngā Tau, Taumata 2-3:</i></p> <ul style="list-style-type: none"> • Te Hautau Ka Mau (wh.21)
Ka whiriwhiria ngā hautanga waetahi o ngā āhua me ngā inenga roa, mā te whakahaurua.	<p>Ka whiriwhiria te $\frac{1}{2}$, te $\frac{1}{4}$, te $\frac{1}{8}$ me te $\frac{1}{16}$ o tētahi porowhita, tapawhā hāngai, ngaku pepa ...</p> <p>Ka whiriwhiria te $\frac{1}{3}$, te $\frac{1}{5}$ me te $\frac{1}{10}$ o tētahi tapawhā hāngai me tētahi ngaku pepa.</p>	<p><i>TPT, Pukapuka 7:</i></p> <ul style="list-style-type: none"> • Pihikete (wh.25) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuatahi, Taumata 2:</i></p> <ul style="list-style-type: none"> • Wānangahia ngā Wāhangā (wh.21) <p><i>He Tau Anō Te Tau: Ngā Tau, Taumata 2-3:</i></p> <ul style="list-style-type: none"> • Wāhangā Porohita (wh.17) • Hautau Hirahira (wh.18) • Pēpeke Pukukai (wh.19)
Ka raupapahia ngā hautau waetahi me ngā hautau e ōrite ana te tauraro, ka whakamāramatia hoki he aha i nui ake ai tētahi i tētahi.	<p>Raupapahia ēnei hautau, ka whakamārama ai he aha i nui ake ai tētahi i tētahi:</p> <p>te $\frac{1}{2}$ me te $\frac{1}{3}$</p> <p>te $\frac{1}{8}$ me te $\frac{1}{4}$</p> <p>te $\frac{1}{5}$ me te $\frac{1}{3}$</p> <p>te $\frac{1}{8}$ me te $\frac{1}{12}$</p> <p>te $\frac{1}{17}$ me te $\frac{1}{15}$</p> <p>te $\frac{1}{100}$ me te $\frac{1}{99}$</p> <p>te $\frac{2}{4}$ me te $\frac{3}{4}$</p> <p>te $\frac{5}{8}$ me te $\frac{3}{8}$</p> <p>te $\frac{5}{3}$ me te $\frac{2}{3}$</p> <p>te $\frac{7}{10}$ me te $\frac{9}{10}$</p>	<p><i>TPT, Pukapuka 7:</i></p> <ul style="list-style-type: none"> • Hautanga Porowhita (wh.31)
Ka whakamahia he rauemi hei raupapa hautau, me te whai wāhi mai o ngā hautau nui ake i te tahī, pērā i te $\frac{5}{3}$ me te $\frac{7}{4}$. Ka whakamārama hoki i te tikanga o te taurunga me te tauraro.	<p>Hangaia ēnei takirua hautau kia kitea ai ko tēhea te mea nui ake:</p> <p>te $\frac{2}{3}$ me te $\frac{4}{5}$</p> <p>te $\frac{3}{4}$ me te $\frac{3}{8}$</p> <p>te $\frac{5}{2}$ me te $\frac{9}{4}$</p> <p>te $\frac{6}{10}$ me te $\frac{3}{5}$</p> <p>te $\frac{1}{2}$ me te $\frac{5}{12}$</p> <p>te $\frac{25}{5}$ me te $\frac{25}{4}$</p>	<p><i>TPT Pukapuka 7:</i></p> <ul style="list-style-type: none"> • Hautanga Porowhita (wh.31)

Ngā Whāinga Paetae: Te Tau, Taumata 2

Mahere Tau | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8

2.1 (Mātauranga Tau)

Ka mōhio ki ngā tauoti 0–1,000: te whakaingoa i ngā tohutau; ngā raupapa tatauranga whakamua, whakamuri hoki; ngā tikanga uara tū; te maha o ngā tahi, ngā tekau me ngā rau kei roto i tētahi tau; te rahi me te hanga o tētahi tau; ngā tikanga o te taurua me te taukehe.

2.2 (Mātauranga Tau)

Ka mōhio ki ngā rearua tae atu ki te 20 me ngā haurua e whai pānga ana.

2.4 (Rautaki Tau)

Ka whakaoti rapanga e whai wāhi mai ana te tauoti me te hautau, ka whakamārama hoki i te rautaki: rautaki tatau; rautaki whakarōpū; rautaki tohatoha ūrite; rautaki wāwāhi tau tāpiripiri māmā.

2.5 (Rautaki Tau)

Ka mārama ki te whaitakenga o te otinga o tētahi rapanga.

Ngā Whāinga Paetae: Te Tau, Taumata 3

3.1 (Mātauranga Tau)

Ka mōhio ki ngā tauoti 0–1,000,000: te whakaingoa i ngā tohutau; ngā momo raupapa tatauranga tauoti; ngā meka matua mō te tāpiri, te tango me te whakarea; te whakaawhiwhi tauoti, tau ā-ira hoki ki te 1, te 10, te 100 rānei e pātata ana; ngā tikanga uara tū o ngā tauoti me ngā tau ā-ira (kia 3 ngā mati ā-ira); te maha o ngā haurau, ngā hautekau, ngā tahi, ngā tekau, ngā rau me ngā mano kei roto i tētahi tau; te rahi me te hanga o tētahi tau.

3.3 (Rautaki Tau)

Ka kōwhiri, ka whakamārama i te rautaki e tino whaihua ana hei whakaoti rapanga e whai wāhi mai ana te tauoti, te hautau, te tau ā-ira me te ūrāu: rautaki tatau; rautaki whakarōpū; rautaki tohatoha ūrite; rautaki tāpiripiri; rautaki whakarea māmā.

3.4 (Rautaki Tau)

Ka mārama ki te whaitakenga o te otinga o tētahi rapanga.

Te Mātauranga	Ngā Rauemi e Hāngai ana
Ka tautuhia ngā tau katoa, 0–1,000,000.	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Kāri Pere (wh.11) • Kōwhiuwhiu Tau (wh.36) • He Whare Uara Tū (wh.38)
Ka raupapahia ngā tauoti, 0–1,000,000.	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Raupapahia ngā Kāri (wh.10) • Kāri Pere (wh.11) • Raupapahia (wh.17) • Whakaaturia ki te Rārangī Tau (wh.18) • He Aha te Tau? (wh.19) • Te Paparau me te Pukamano (wh.21) • He Aho Pireppire (wh.23) • Te Tau Nui Rawa Atu (wh.25) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuarua, Taumata 3:</i></p> <ul style="list-style-type: none"> • Kia Tika te Raupapa (wh.4)

<p>Ka pānui, ka raupapa tau ā-ira e whai wāhi mai ana he hautekau; ka tatau mawhiti-hautekau whakamua, whakamuri hoki.</p>	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Raupapahia ngā Kāri (wh.10) • Kāri Pere (wh.11) • Raupapahia (wh.17) • Whakaaturia ki te Rārangi Tau (wh.18) • He Aha te Tau? (wh.19) <p><i>Ngā Rauemi o te BSM:</i> 10-3-86, 11-3-3, 11-3-42</p>	
<p>Ka mōhio ki ngā rōpū o roto i te mano, pērā i te 240 me te 760.</p>	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Whiriwhiria te Tau (wh.86) • Huria te Tau (wh.87) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuatoru, Taumata 3:</i></p> <ul style="list-style-type: none"> • Ngā Tau Tapeke Pai (wh.1) 	
<p>Ka mōhio ki te maha o ngā rōpū o te 10 me te 100 kei roto i tētahi tau matiwhā.</p>	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • E Pātata ana ki te 100 (wh.82) • Whakawhitia ngā Paparanga Uara Tū (wh.88) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuatoru, Taumata 3:</i></p> <ul style="list-style-type: none"> • Te Whare Pūtea (wh.3) <p><i>He Tau Anō Te Tau: Te Tau, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • Te Pēke Mimiti Kore (wh.1) 	
<p>Ka tuhia he pikitia, he whārite hoki hei whakaatu i ngā whiriwhiringa tāpiritanga, tangohanga hoki.</p>	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Aho Pirepire (wh.110) 	
<p>Ka whakaawhiwhia ngā tauoti ki te tekau, ki te rau, ki te mano rānei e pātata ana.</p>	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Whakaawhiwhia ki te Tekau (wh.94) <p><i>He Tau Anō Te Tau: Ngā Meka Matua, Taumata 3:</i></p> <ul style="list-style-type: none"> • Te Tauomaoma Hōihō (wh.23) 	
<p>Ka whakamahia te tuhinga ōkawa hei whakaoti tāpiritanga, tangohanga hoki.</p>	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • E Pātata ana ki te 100 (wh.82) <p><i>He Tau Anō Te Tau: Ngā Tau, Taumata 2-3:</i></p> <ul style="list-style-type: none"> • Ki Wīwī ki Wāwā (wh.10) <p><i>He Tau Anō Te Tau: Te Tau, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • Hei Aha te Tātaitai! (wh.13) 	
Ngā Rautaki	Te Panuku o ngā Rapanga	Ngā Rauemi e Hāngai ana
<p>Ka whakamahia te rautaki ‘hoki whakamuri ki te tau māmā’ hei whakaoti rapanga tango:</p> <ul style="list-style-type: none"> • ko te whiriwhiri i te otinga, pērā i te $65 - 8 = \square$; • ko te whiriwhiri i te tau tango, pērā i te $65 - \square = 57$; 	$24 - 4 = \square$, nō reira, $24 - 6 = \square$ $48 - 8 = \square$, nō reira, $48 - 9 = \square$ $65 - 5 = \square$, nō reira, $65 - 8 = \square$ $86 - 6 = \square$, nō reira, $86 - 9 = \square$ $94 - 4 = \square$, nō reira, $94 - 8 = \square$	<p><i>TPT, Pukapuka 5:</i></p> <ul style="list-style-type: none"> • Wāwāhia, Tangohia (wh.100) <p><i>He Tau Anō Te Tau: Ngā Meka Matua, Taumata 3:</i></p> <ul style="list-style-type: none"> • He Iwa, he Waru (wh.4) • Me Tāpiri, me Tango Rānei (wh.5)

<ul style="list-style-type: none"> ko te whiriwhiri i te tau tīmatanga, pērā i te \square – 8 = 57. 	$136 - 6 = \square$, nō reira, $136 - 8 = \square$ $503 - 3 = \square$, nō reira, $503 - 8 = \square$	<i>He Tau Anō Te Tau: Ngā Meka Matua, Taumata 3-4:</i> <ul style="list-style-type: none"> E Hoki ki te 10 (wh.14)
<p>Ka whakaoti rapanga tango mā te tango i ngā mati uara tū.</p>	$35 - 20 = \square$ $78 - 50 = \square$ $183 - 40 = \square$ $236 - 50 = \square$ $507 - 60 = \square$ $913 - 130 = \square$ $425 - 101 = \square$ $873 - 502 = \square$ $946 - 35 = \square$	
<p>Ka whakamahia te rautaki ‘wāwāhia ngā uara tū’ hei whakaoti rapanga tango. Hei tauira: $73 - 46 = 73 - 40 - 6 = 33 - 6 = 27$</p>	$42 - 26 = \square$ $82 - 45 = \square$ $71 - 39 = \square$ $123 - 57 = \square$ $124 - 68 = \square$ $272 - 93 = \square$ $486 - 157 = \square$ $916 - 408 = \square$	<p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuatahi, Taumata 2:</i></p> <ul style="list-style-type: none"> Te Tawhiti o te Mawhiti (wh.8) Te Tiaki Manu (wh.11) Kimihia te Tau (wh.16) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuatoru, Taumata 3:</i></p> <ul style="list-style-type: none"> He Puke Pāhekeheke (wh.8)
<p>Ka whakamahia te rautaki ‘te tau māmā me te tikanga paremata’ hei whakaoti rapanga tāpiri.</p>	$35 + 19 = \square \rightarrow 34 + 20 = \square$ $48 + 49 = \square \rightarrow 50 + 50 - 3 = \square$ $65 + 97 = \square \rightarrow 62 + 100 = \square$ $298 + 397 = \square \rightarrow 300 + 400 - 5 = \square$ $78 + 387 = \square \rightarrow 65 + 400 = \square$ $456 + 375 = \square \rightarrow 431 + 400 = \square$	<p><i>TPT, Pukapuka 5:</i></p> <ul style="list-style-type: none"> Peke atu ki te Tau Māmā (wh.114) Peke atu ki Tua, ka Heke Whakararo ai (wh.120)
<p>Ka whakaoti rapanga tāpiri, rapanga tango hoki, mā te whakamahi taurata.</p>	$43 + 37 = \square$ $38 + 62 = \square$ $125 + 75 = \square$ $45 + 255 = \square$ $37 + 46 + 13 + 4 = \square$ $158 + 342 = \square$ $25 + 81 + 34 + 19 + 75 + 66 = \square$ $260 + 150 + 340 = \square$ $333 + 444 + 555 + 666 = \square$	<p><i>TPT, Pukapuka 5:</i></p> <ul style="list-style-type: none"> E Pātata ana tētahi Tau Tāpiri ki te 100 (wh.127) Tangohia he Tau Māmā (wh.129) Tāpiritanga Ōrite (wh.131) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuarua, Taumata 3:</i></p> <ul style="list-style-type: none"> Te Whaiwhai Toroa (wh.1)

<p>Ka whakamahia te rautaki ‘huri kōaro’, hei whakaoti rapanga tango. Hei tauira:</p> $72 - 45 = \square \rightarrow 45 + \square = 72$	$43 - 39 = \square \rightarrow 39 + \square = 43$ $83 - 76 = \square \rightarrow 76 + \square = 83$ $91 - 68 = \square \rightarrow 68 + \square = 91$ $203 - 187 = \square \rightarrow 187 + \square = 203$ $783 - 395 = \square \rightarrow 395 + \square = 783$	<p><i>TPT, Pukapuka 5:</i></p> <ul style="list-style-type: none"> • Paheko Kōaro (wh.117) • Ngā Rapanga pēnei i te 67 – \square = 34 (wh.141) <p><i>He Tau Anō Tē Tau: Ngā Meka Matua, Taumata 3:</i></p> <ul style="list-style-type: none"> • Whāia te Mahere Huānga (wh.8)
<p>Ka whakamahia te tikanga o te whakawhitī uara tū hei whakaoti rapanga tāpiri, rapanga tango hoki, me te tirotiro anō ki te tuhinga ōkawa.</p>	$46 + 38$ $93 - 57$ $537 + 429$ $714 - 267$	<p><i>TPT, Pukapuka 5:</i></p> <ul style="list-style-type: none"> • Te Tuhihinga Ōkawa hei Whakaoti Tāpiritanga (wh.146) • Te Tuhihinga Ōkawa hei Whakaoti Tangohanga (wh.149)
<p>Ka āta kōwhiria te rautaki ā-hinengaro e tino whaihua ana hei whakaoti rapanga tāpiri, rapanga tango hoki.</p>	$65 + 79 = \square$ $94 - 78 = \square$ $345 + 656 = \square$ $84 - 56 = \square$ $603 - 287 = \square$ $286 + \square = 942$ $\square - 429 = 831$	<p><i>TPT, Pukapuka 5:</i></p> <ul style="list-style-type: none"> • Hei Whakapakari i ngā Rautaki ā-Hinengaro (wh.153)

Ngā Whāinga Paetae: Te Tau, Taumata 3

Mahere Tau	0	1	2	3	4	5	6	7	8
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3.1 (Mātauranga Tau)

Ka mōhio ki ngā tauotī 0–1,000,000: te whakaingoa i ngā tohutau; ngā momo raupapa tatauranga tauotī; ngā meka matua mō te tāpiri, te tango me te whakarea; te whakaawhiwhi tauotī, tau ā-ira hoki ki te 1, te 10 te 100 rānei e pātata ana; ngā tikanga uara tū o ngā tauotī me ngā tau ā-ira (kia 3 ngā mati ā-ira); te maha o ngā haurau, ngā hautekau, ngā tahi, ngā tekau, ngā rau me ngā mano kei roto i tētahi tau; te rahi me te hanga o tētahi tau.

3.3 (Rautaki Tau)

Ka kōwhiri, ka whakamārama i te rautaki e tino whaihua ana hei whakaoti rapanga e whai wāhi mai ana te tauotī, te hautau, te tau ā-ira me te ūrāu: rautaki tatau; rautaki whakarōpū; rautaki tohatoha ūrite; rautaki tāpiripiri, rautaki whakarea māmā.

3.4 (Rautaki Tau)

Ka mārama ki te whaitakenga o te otinga o tētahi rapanga.

Te Mātauranga	Ngā Rauemi e Hāngai ana
Ka mōhio ki ngā rōpū o te 2, o te 3, o te 5, me te 10 kei roto i ngā tau, tae atu ki te 100, me ngā toenga ka hua mai.	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Tatau Māwhitiwhiti i te Rārangī Tau (wh.8) • Ararā! (wh.9) • Tātaitai (wh.15) • Te Whakarea hei Whakaoti Whakawehenga (wh.116)
Ka whakaputa wawe i ngā meka whakarea mō te 2, te 3, te 5 me te 10.	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Whiriwhiria te Paheko (wh.112) • Whakareatia (wh.113) • He Ara Paheko Tau (wh.114) • Whārite Whakareatanga (wh.118) <p><i>He Tau Anō Te Tau: Ngā Meka Matua, Taumata 2-3:</i></p> <ul style="list-style-type: none"> • Hoki Ana ki te Kāinga (wh.11) • Pū Ono (wh.24) <p><i>He Tau Anō Te Tau: Ngā Meka Matua, Taumata 3:</i></p> <ul style="list-style-type: none"> • Kei te Mataono te Kōrero (wh.20) <p><i>He Tau Anō Te Tau: Ngā Meka Matua, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • Te Tautuhi Tauwehe (wh.12) • E Hia ngā Tauwehe? (wh.15) • He Whakawhitia ki Kō (wh.16)
Ka mōhio ki ngā rōpū o te 10 me te 100 kei roto i tētahi tau matiwhā.	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Whakawhitia ngā Paparanga Uara Tū (wh.88)
Ka mōhio ki ngā meka pūrua, tae atu ki $10 \times 10 = 100$.	
Ka tuhia he whārite, he pikitia hoki hei whakaatu i ngā whiriwhiringa ā-hinengaro, hei whakaoti whakareatanga, whakawehenga hoki.	

Ngā Rautaki	Te Panuku o ngā Rapanga	Ngā Rauemi e Hāngai ana
Ka whakamahia te ‘āhuatanga tātai tohatoha’ me ngā meka whakarea mō te 5 hei whakaputa i ngā meka whakarea mō te 6, te 7, me te 4.	$2 \times 5 = \square$, nō reira; $2 \times 6 = \square$, $2 \times 7 = \square$ $4 \times 5 = \square$, nō reira; $4 \times 6 = \square$, $4 \times 7 = \square$ $6 \times 5 = \square$, nō reira; $6 \times 6 = \square$, $6 \times 7 = \square$ $9 \times 5 = \square$, nō reira; $9 \times 6 = \square$, $9 \times 7 = \square$ $20 \times 5 = \square$, nō reira; $20 \times 6 = \square$, $20 \times 7 = \square$	<i>TPT, Pukapuka 6:</i> <ul style="list-style-type: none"> • Ngā kōrero whakataki mō te Kaupae 5–6 (wh.41) • Whakareatia ki te Rima (wh.47) • Parematatia (wh.54)
Ka whakamahia te ‘āhuatanga tātai tohatoha’ me ngā meka whakarea mō te 10 hei whakaputa i ngā meka whakarea mō te 9.	$10 \times 2 = \square$, nō reira, $9 \times 2 = \square$ $10 \times 9 = \square$, nō reira, $9 \times 9 = \square$ $10 \times 6 = \square$, nō reira, $9 \times 6 = \square$ $9 \times 3 = 30 - \square = \square$ $9 \times 8 = 80 - \square = \square$ $9 \times 5 = 50 - \square = \square$ $20 \times 2 = \square$, nō reira, $19 \times 2 = \square$ $100 \times 4 = \square$, nō reira, $99 \times 4 = \square$	<i>TPT, Pukapuka 6:</i> <ul style="list-style-type: none"> • Parematatia (wh.54)
Ka whakamahia te ‘āhuatanga tātai kōaro’ o te whakarea hei whakamāmā i te whakareatanga. Hei tauira: $3 \times 26 = 26 \times 3$		<i>TPT, Pukapuka 6:</i> <ul style="list-style-type: none"> • Te Huri Kōaro i te Whakareatanga (wh.58) <p><i>He Tau Anō Te Tau: Ngā Tau, Taumata 2-3:</i></p> <ul style="list-style-type: none"> • Waka Rererangi Rerekē (wh.14) <p><i>He Tau Anō Te Tau: Ngā Meka Matua, Taumata 2-3:</i></p> <ul style="list-style-type: none"> • Kua Pau te Wā (wh.8)
Ka whiriwhiria te maha o ngā tahi, ngā tekau, ngā rau me ngā mano kei roto i tētahi tauoti.		<i>TPT, Pukapuka 6:</i> <ul style="list-style-type: none"> • Moni Whakawhitihiti (wh.43)
Ka whakamahia te ‘āhuatanga tātai tohatoha’, me ngā meka rearua hei whakaputa i ngā meka whakarea mō te 3, te 4, te 6 me te 8.	$5 \times 2 = \square$, nō reira, $5 \times 4 = \square$, $4 \times 5 = \square$ $6 \times 2 = \square$, nō reira, $6 \times 3 = \square$, $6 \times 4 = \square$, $6 \times 6 = \square$, $6 \times 8 = \square$ $8 \times 2 = \square$, nō reira, $8 \times 3 = \square$, $8 \times 4 = \square$, $8 \times 6 = \square$, $8 \times 8 = \square$ $25 \times 2 = \square$, nō reira, $25 \times 3 = \square$, $25 \times 4 = \square$, $25 \times 8 = \square$	<i>He Tau Anō Te Tau: Ngā Meka Matua, Taumata 3:</i> <ul style="list-style-type: none"> • He Panga Tauwehe (wh.11) • Te Whetū Taparau (wh.12) • He Whakaata Rau (wh.21)

<p>Ka whakaoti whakareatanga ki te tau ngahuru, ki te tau rau, ki te tau mano, ki ētahi atu taupūtanga hoki o te 10.</p>	<p>$10 \times 5 = \square$, $20 \times 5 = \square$, $40 \times 5 = \square$ $10 \times 8 = \square$, $20 \times 8 = \square$, $30 \times 8 = \square$ $10 \times 6 = \square$, $30 \times 6 = \square$, $60 \times 6 = \square$ $100 \times 4 = \square$, $200 \times 4 = \square$, $400 \times 4 = \square$ $100 \times 3 = \square$, $400 \times 3 = \square$, $900 \times 3 = \square$</p>	<p><i>TPT, Pukapuka 6:</i> • Whakareatia ki te Tekau (wh.51)</p> <p><i>He Tau Anō Te Tau: Te Tau, Taumata 3:</i> • Tokohia ka Ō (wh.4) • Te Tau Tekau (wh.8)</p>
<p>Ka huri kōaro i ngā meka whakareatanga hei whakaoti rapanga tohatoha.</p>	<p>$9 \times 4 = \square$, nō reira: Tohaina te 36 kia 4 ngā rōpū. Kia 2 ngā rōpū. $10 \times 6 = \square$, nō reira: Tohaina te 60 kia 10 ngā rōpū. Kia 5 ngā rōpū. Kia 20 ngā rōpū. $8 \times 3 = \square$, nō reira: Tohaina te 24 kia 3 ngā rōpū. Kia 6 ngā rōpū. $8 \times 8 = \square$, nō reira: Tohaina te 64 kia 8 ngā rōpū. Kia 4 ngā rōpū. Kia 16 ngā rōpū. $8 \times 9 = \square$, nō reira: Tohaina te 72 kia 3 ngā rōpū. Kia 18 ngā rōpū.</p>	<p><i>TPT Pukapuka 6:</i> • Hurihia te Whakawehenga hei Whakareatanga (wh.67)</p> <p><i>He Tau Anō Te Tau: Ngā Tau, Taumata 2-3:</i> • Ngeru Nanakia (wh.15) • Ka Pai te Peke Haere (wh.16)</p>
<p>Ka huri kōaro i ngā meka whakareatanga hei whiriwhiri i te maha o ngā rōpū ōrite kei roto i tētahi tau.</p>	<p>$8 \times 5 = \square$, nō reira: E hia ngā rōpū o te 8 kei roto i te 40? Ngā rōpū o te 2? Ngā rōpū o te 4? $7 \times 6 = \square$, nō reira: E hia ngā rōpū o te 6 kei roto i te 42? Ngā rōpū o te 7? Ngā rōpū o te 3? Ngā rōpū o te 14? $4 \times 9 = \square$, nō reira: E hia ngā rōpū o te 8 kei roto i te 36? Ngā rōpū o te 3? Ngā rōpū o te 12?</p>	<p><i>TPT, Pukapuka 6:</i> • Peke Roa (wh.62)</p> <p><i>He Tau Anō Te Tau: Ngā Meka Matua, Taumata 2-3:</i> • Hoki Ana ki te Kāinga (wh.11)</p>
<p>Ka kōwhiria te maha o ngā rautaki ā-hinengaro hei whakaoti rapanga tāpiri, rapanga tango, rapanga whakarea, rapanga whakawehē hoki.</p>		<p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuatahi, Taumata 2:</i> • He Moni Pūkoro (wh.15) • A Keri te Kurī (wh.19)</p> <p><i>He Tau Anō Te Tau: Ngā Meka Matua, Taumata 2-3:</i> • 31, Kore Rānei (wh.4)</p>

Ngā Whāinga Paetae: Te Tau, Taumata 3

Mahere Tau	0	1	2	3	4	5	6	7	8
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3.1 (Mātauranga Tau)

Ka mōhio ki ngā tauoti 0–1,000,000: te whakaingoa i ngā tohutau; ngā momo raupapa tatauranga tauoti; ngā meka matua mō te tāpiri, te tango me te whakarea; te whakawhiwhi tauotī, tau ā-ira hoki ki te 1, te 10, te 100 rānei e pātata ana; ngā tikanga uara tū o ngā tauoti me ngā tau ā-ira (kia 3 ngā mati ā-ira); te maha o ngā haurau, ngā hautekau, ngā tahi, ngā tekau, ngā rau me ngā mano kei roto i tētahi tau; te rahi me te hanga o tētahi tau.

3.2 (Mātauranga Tau)

Ka mōhio ki ngā hautau (tae atu ki ngā hautau nui ake i te kotahi) me ngā tau ā-ira: te raupapa hautau (hautau waetahi), tau ā-ira hoki; ngā raupapa tatauranga hautau, tau ā-ira hoki (hautekau, haurau).

3.3 (Rautaki Tau)

Ka kōwhiri, ka whakamārama i te rautaki e tino whaihua ana hei whakaotī rapanga e whai wāhi mai ana te tauoti, te hautau, te tau ā-ira me te ūrāu: rautaki tatau; rautaki whakarōpū; rautaki tohatoha ūrite; rautaki tāpiripiri, rautaki whakarea māmā.

3.4 (Rautaki Tau)

Ka mārama ki te whaitakenga o te otinga o tētahi rapanga.

Te Mātauranga	Ngā Rauemi e Hāngai ana
Ka mōhio ki ngā tau ā-ira, tae atu kia toru ngā mati ā-ira.	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Ararā! (wh.9) • Kāri Pere (wh.11) • Whakaaturia ki te Rārangī Tau (wh.18) • He Aha te Tau? (wh.19) • Kōwhiuwhiu Tau (wh.36) • He Whare Uara Tū (wh.38) • Te Hautanga ā-Ira (wh.63) • Te Moni me te Hautanga ā-Ira (wh.67) <p><i>He Tau Anō Te Tau: Ngā Tau, Taumata 2-3:</i></p> <ul style="list-style-type: none"> • Me Ohu te Mahi (wh.24)
Ka mōhio ki ngā tohu hautanga katoa, pērā i ngā hautekau, ngā haurau, ngā haumano, me ngā hautau nui ake i te kotahi.	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • He Aho Pirepire (wh.23) • He Wehenga Hautanga (wh.54) • Te Hautau ki te Papa Tīrau 1 (wh.56) • Te Hautau ki te Papa Tīrau 2 (wh.58) • Ngā Hautau Waetahi-kore (wh.59) • He Pākete Rare (wh.60)
Ka mōhio ki ngā tatauranga hautau, whakamua, whakamuri hoki, mawhiti-haurua, -hauwhā, -hautoru, -haurima, -hautekau.	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Tatau Māwhitiwhiti i te Rārangī Tau (wh.8) • Ararā! (wh.9)
Ka mōhio ki ngā tatauranga hautanga ā-ira, whakamua, whakamuri hoki, mawhiti-hautekau, -haurau.	

Ka mōhio ki te raupapa hautau waetahi.		<i>TPT, Pukapuka 4:</i> • Raupapahia ngā Kāri (wh.10) • Kei a Wai te Keke Nui? (wh.42) • Ngā Hautanga ki te Rārangi Tau (wh.46)
Ka whakaawhiwhi tau ā-ira (tae atu kia rua ngā mati ā-ira) ki te tauoti e pātata ana.		<i>He Tau Anō Te Tau: Te Tau, Taumata 3:</i> • Te Whakaawhiwhi (wh.17)
Ngā Rautaki	Te Panuku o ngā Rapanga	Ngā Rauemi e Hāngai ana
Ka whakamahia ngā meka whakarea, whakawehe hoki hei whiriwhiri i te hautanga o tētahi tau. Hei tauira: $\frac{1}{3} \text{ o te } 21 = 7$ nā te mea $7 \times 3 = 21$.	$\frac{1}{4} \text{ o te } 24 = \square$ $\frac{1}{5} \text{ o te } 40 = \square$ $\frac{1}{3} \text{ o te } 27 = \square$ $\frac{3}{4} \text{ o te } 20 = \square$ $\frac{2}{5} \text{ o te } 30 = \square$ $\frac{3}{10} \text{ o te } 100 = \square$	<i>TPT, Pukapuka 7:</i> • Ngā kōrero whakataki mō te Kaupae 5-6 (wh.39) • Keke Huritau (wh.42) <i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuatahi, Taumata 2:</i> • He Reka ngā Kai (wh.20) <i>He Tau Anō Te Tau: Te Tau, Taumata 3:</i> • Te Reka Hoki! (wh.12) <i>He Tau Anō Te Tau: Te Tau, Taumata 3:</i> • Te Penapena Moni (wh.5) • Te Kai Pūngao (wh.23)
Ka whakamahia te hangarite hei whiriwhiri i ngā hautanga o ngā āhua me ngā inenga roa, pērā i te porowhita, te tapawhā hāngai me te ngaku pepa.	Whakaaturia ēnei hautanga o tētahi āhua: $\frac{1}{4}, \frac{3}{4}, \frac{1}{8}, \frac{3}{8}, \frac{4}{8}, \frac{7}{8}, \frac{1}{16}, \frac{5}{16} \dots$ Whakaaturia ēnei hautanga o tētahi āhua: $\frac{1}{3}, \frac{2}{3}, \frac{3}{3}, \frac{1}{6}, \frac{2}{6}, \frac{5}{6}, \frac{1}{12}, \frac{5}{12}, \frac{8}{12} \dots$ Whakaaturia ēnei hautanga o tētahi āhua: $\frac{1}{5}, \frac{2}{5}, \frac{4}{5}, \frac{1}{10}, \frac{3}{10} \dots$	<i>TPT, Pukapuka 7:</i> • Hautanga Tukutuku (wh.46) <i>He Tau Anō Te Tau: Te Tau, Taumata 2:</i> • Tēnā Whātuia! (wh.22) <i>He Tau Anō Te Tau: Ngā Tau, Taumata 2-3:</i> • Kaua te Waka e Whakarērea (wh.23) • Te Wehewehe Parāoa Pokepoke (wh.22)
Ka whakaoti rapanga whakawehe e whai toenga ana, me te whakaatu anō i ua toenga hei hautau.	$5 \div 2 = \square$ $3 \div 4 = \square$ $6 \div 8 = \square$ $7 \div 4 = \square$ $2 \div 3 = \square$	<i>He Tau Anō Te Tau: Ngā Tau, Taumata 2-3:</i> • Me Ohu te Mahi (wh.24)
Ka whiriwhiria he ōwehenga ōrite mā te tāruaruatanga.	$1:2 \rightarrow \square : 4 \rightarrow 8 : \square \dots$ $2:3 \rightarrow \square : 12 \rightarrow 20 : \square \dots$	<i>TPT, Pukapuka 7:</i> • Pēke Kākano (wh.50)

	$3:1 \rightarrow \square : 7 \rightarrow 30 : \square \dots$ $2:5 \rightarrow \square : 25 \rightarrow 40 : \square \dots$ $3:4 \rightarrow \square : 16 \rightarrow 33 : \square \dots$ $5:3 \rightarrow \square : 15 \rightarrow 100 : \square \dots$	
<p>Ka whiriwhiria te maha o ngā hautau waetahi kei roto i tētahi tauotī. Hei tauira: te maha o ngā $\frac{1}{4}$ kei roto i te 5 $\rightarrow 5 \div \frac{1}{4}$</p>	$3 \div \frac{1}{2} = \square$ $2 \div \frac{1}{5} = \square$ $4 \div \frac{1}{3} = \square$ $5 \div \frac{1}{10} = \square$ $10 \div \frac{1}{8} = \square$ $7 \div \frac{1}{100} = \square$	

Ngā Whāinga Paetae: Te Tau, Taumata 4

Mahere Tau	0	1	2	3	4	5	6	7	8
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4.2 (Mātauranga Tau)

Ka mōhio ki ngā tikanga o: te tau tōraro me te tau tōrunga; te tau toitū; te ūwehenga; te uara tū o ngā tau ā-ira; te maha o ngā haumano, ngā haurau, ngā hautekau, ngā tahi, ngā tekau, ngā rau me ngā mano kei roto i tētahi tau ā-ira (tae atu kia 3 ngā mati ā-ira).

4.3 (Mātauranga Tau)

Ka mōhio ki te kimi mai i ngā taurea me ngā tauwehe o tētahi tau.

4.5 (Rautaki Tau)

Ka kōwhiri, ka whakamārama i te rautaki e tino whaihua ana hei whakaoti rapanga e whai wāhi mai ana te tauotī, te hautau, te tau ā-ira, te īrau, te ūwehenga, te tau tōpū me te taupū māmā: rautaki tatau; rautaki tāpiripiri; rautaki whakarea; rautaki pānga riterite māmā.

4.6 (Rautaki Tau)

Ka mārama ki te whaitakenga o te otinga o tētahi rapanga.

Te Mātauranga	Ngā Rauemi e Hāngai ana
Ka mōhio ki te raupapa tatauranga whakamua, whakamuri hoki, mawhiti-haumano, mawhiti-haurau, mawhiti-hautekau, ā-tahi, mawhiti-tekau .., ahakoa te tau tīmatatanga.	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Whakaaturia ki te Rārangi Tau (wh.18) • Te Paparau me te Pukamano (wh.21) • Kōwhiuwhiu Tau (wh. 36) • He Whare Uara Tū (wh.38) <p><i>He Tau Anō Te Tau: Te Tau, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • Whāia te Tau Teitei (wh.6)
Ka raupapahia ngā tau ā-ira (kia 3 ngā mati ā-ira).	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Raupapahia ngā Kāri (wh.10) • Kāri Pere (wh.11) • Raupapahia (wh.17) • He Aha te Tau? (wh.19) • He Aho Pirepire (wh.23) • Te Tau Nui Rawa Atu (wh.25) • Te Hautanga ā-Ira (wh.63)
Ka mōhio ki te maha o ngā rōpū o te 10, te 100, me te 1,000 kei roto i tētahi tau (tae atu ki ngā tau matiwhitu).	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Whakawhitia ngā Paparanga Uara Tū (wh.88)
Ka whakaawhiwhia ngā tauotī me ngā tau ā-ira (tae atu kia 2 ngā mati ā-ira) ki te tahi, ki te hautekau rānei e pātata ana.	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Whakaawhiwhinga Whaitake (wh.70) • Whakaawhiwhia ki te Tekau (wh.94)
Ka whakaoti tāpiritanga, tangohanga hoki mā te tuhinga hātepe ūkawa, e whai wāhi mai ana he tauotī, he tau ā-ira rānei.	<p><i>TPT, Pukapuka 5:</i></p> <ul style="list-style-type: none"> • Te Tuhinga ūkawa hei Whakaoti Tāpiritanga (wh.146) • Te Tuhinga ūkawa hei Whakaoti Tangohanga (wh.149) • Te Tāpiri Hautau ā-Ira 1 (wh.158) • Te Tango Hautau ā-Ira 1 (wh.160)

Ngā Rautaki	Te Panuku o ngā Rapanga	Ngā Rauemi e Hāngai ana
Ka whakamahia te rautaki whakarea hei whakaoti rapanga tāpiri, rapanga tango hoki, mēnā e whai wāhi mai ana he tauwehe pātahi. Hei tauira: $24 + 27 + 23 + 26 = 25 \times 4 = 100$	$36 + 45 = \square \rightarrow 4 \times 9 + 5 \times 9 = 9 \times 9 = \square$ $77 - 28 = \square \rightarrow 11 \times 7 - 4 \times 7 = 7 \times 7 = \square$ $24 + 48 + 64 + 32 \rightarrow (3 + 6 + 8 + 4) \times 8 = 21 \times 8 = \square$ $29 + 30 + 28 + 33 + 32 + 27 + 31 + 30 = \square \rightarrow 30 \times 8 = \square$ $99 - 36 - 27 = \square \rightarrow (11 - 4 - 3) \times 9 = \square$	<i>TPT, Pukapuka 5:</i> <ul style="list-style-type: none"> • Te Tāpiri i tētahi Raupapatanga Tau (wh.179) • Te Whakarea hei Whakaoti Tāpiritanga, Tangohanga hoki (wh.182) <i>TPT, Pukapuka 8:</i> <ul style="list-style-type: none"> • Te Tāpiri i tētahi Raupapatanga Tau (wh.97) <p><i>He Tau Anō Te Tau: Te Mātauranga Tau Me Tē Whakaaro Taurangi, Pukapuka Tuatahi, Taumata 3:</i></p> <ul style="list-style-type: none"> • He Paheko Rauhanga (wh.16)
Ka whakaoti rapanga tāpiri, rapanga tango hoki, e whai wāhi mai ana te tau tōpū (arā, he tau tōraro, he tau tōrunga).	$+2 + ^3 = \square$ $-4 + ^1 = \square$ $+4 + ^5 = \square$ $-2 + ^8 = \square$ $+6 - ^5 = \square$ $-7 - ^3 = \square$ $+5 - ^2 = \square$ $-3 - ^7 = \square$	<i>TPT, Pukapuka 5:</i> <ul style="list-style-type: none"> • Utua mai, Utua atu (wh.172) • He Puke, he Häpua (wh.174) <i>TPT, Pukapuka 8:</i> <ul style="list-style-type: none"> • Te Tau Tōraro me te Tangohanga (wh.86) <p><i>He Tau Anō Te Tau: Te Tau, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • Kei Riro i te Korokoro o te Mako (wh.23) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuatoru, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • Ngā Ahi Tipua o Aotearoa (wh.20) • Ka Teitei Ake, ka Makariri Ake (wh.22)
Ka whakamahia te whānui o ngā rautaki tau ā-hinengaro, ā-tuhi hoki, hei whakaoti rapanga e whai wāhi mai ana te tāpiri, te tango, te whakarea me te whakawehe tauoti.	<p>E toru ngā tī-hāte i hokona e Hūria, \$16 te utu mō ia tī-hāte. E whā hoki ngā tarau poto, \$13 mō ia tarau poto. E hia te tapeke o te utu?</p> <p>E 204 katoa ngā kēne waireka, e hono ana hei pūkei takiono. Ka pau te 13 o ēnei pūkei takiono. E hia kēne e toe mai ana?</p> <p>Ka tōpūngia ngā pūtea e whā nei, te \$43, te \$56, te \$21, me te \$33. Ka tohaina te tapeke ki ētahi hoa tokowhā, kia ōrite te whiwhinga a tēnā me tēnā. E hia tāra te whiwhinga a tētahi?</p>	<p><i>He Tau Anō Te Tau: Ngā Meka Matua, Taumata 3:</i></p> <ul style="list-style-type: none"> • He Tāpiri Takirua (wh.9) • Te Hahaupōro ā-Tātaitai (wh.18) • Kimihia te Tau (wh.16) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuarua, Taumata 3:</i></p> <ul style="list-style-type: none"> • Te Huri Haere mā Raro (wh.2) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuatoru, Taumata 3:</i></p> <ul style="list-style-type: none"> • Mā te Mahi te Wawata ka Ea (wh.10) <p><i>He Tau Anō Te Tau: Te Tau, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • Hei Aha te Tātaitai! (wh.13) • Te Kapa Haka (wh.14)

Ngā Whāinga Paetae: Te Tau, Taumata 3

Mahere Tau | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8

3.1 (Mātauranga Tau)

Ka mōhio ki ngā tauoti 0–1,000,000: te whakaingoa i ngā tohutau; ngā momo raupapa tatauranga tauoti; ngā meka matua mō te tāpiri, te tango me te whakarea; te whakaawhiwhi tauoti, tau ā-ira hoki ki te 1, te 10, te 100 rānei e pātata ana; ngā tikanga uara tū o ngā tauoti me ngā tau ā-ira (kia 3 ngā mati ā-ira); te maha o ngā haurau, ngā hautekau, ngā tahi, ngā tekau, ngā rau me ngā mano kei roto i tētahi tau; te rahi me te hanga o tētahi tau.

Ngā Whāinga Paetae: Te Tau, Taumata 4

4.5 (Rautaki Tau)

Ka kōwhiri, ka whakamārama i te rautaki e tino whaihua ana hei whakaotī rapanga e whai wāhi mai ana te tauoti, te hautau, te tau ā-ira, te ōrau, te ūrehenga, te tau tōpū me te taupū māmā: rautaki tatau; rautaki tāpiripiri; rautaki whakarea; rautaki pāngā riterite māmā.

4.6 (Rautaki Tau)

Ka mārama ki te whaitakenga o te otinga o tētahi rapanga.

Te Mātauranga	Ngā Rauemi e Hāngai ana
Ka mōhio ki ngā rōpū o te tekau, o te rau, o te mano kei roto i ngā tau matiwhitu.	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Tātaitai (wh.15) • Huria te Tau (wh.87) • Whakawhitia ngā Paparanga Uara Tū (wh.88)
Ka raupapahia ngā tau ā-ira (kia 3 ngā mati ā-ira).	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Raupapahia ngā Kāri (wh.10) • Kāri Pere (wh.11) • Raupapahia (wh.17) • He Aha te Tau? (wh.19) • He Aho Pirepire (wh.23) • Te Tau Nui Rawa Atu (wh.25) • Te Hautanga ā-Ira (wh.63)
Ka whakaputa wawe i ngā meka whakarea, tae atu ki te 10 × 10, me ngā meka whakawehē e whai pāngā ana.	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Ararā! (wh.9) • Raupapatanga Meka Matua (wh.111) • Whiriwhiria te Paheko (wh.112) • Whakareatia (wh.113) • He Ara Paheko Tau (wh.114) • Te Whakarea hei Whakaotī Whakawehenga (wh.116) • Whārite Whakareatanga (wh.118) <p><i>He Tau Anō Te Tau: Ngā Meka Matua, Taumata 2-3:</i></p> <ul style="list-style-type: none"> • Mirimiri Mataono (wh.2) • He Panga Tāpiapia (wh.20) • Kāri Whakarori (wh.23) <p><i>He Tau Anō Te Tau: Ngā Meka Matua, Taumata 3:</i></p> <ul style="list-style-type: none"> • He Panga Tauwehe (wh.11) • Te Whetū Taparau (wh.12) • He Takirua Rite (wh.15) • He Whakaata Rau (wh.21)

	<p><i>He Tau Anō Te Tau: Ngā Meka Matua, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • Te Tukutuku Taurea (wh.10) <p><i>He Tau Anō Te Tau: Ngā Tau, Taumata 2-3:</i></p> <ul style="list-style-type: none"> • Waka Rererangi Rerekē (wh.14) • Ngeru Nanakia (wh.15) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuarua, Taumata 3:</i></p> <ul style="list-style-type: none"> • He Pāngarau te Pikitia (wh.6) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuatoru, Taumata 3:</i></p> <ul style="list-style-type: none"> • Ngā Iwa Māmā (wh.14) 	
Ka mōhio ki te maha o ngā rōpū (o ngā tau tae atu ki te 10) kei roto i tētahi tauotī (tae atu ki te 100), me ngā toenga ka hua mai. Hei tauira: E 6 ngā rōpū o te ono kei roto i te 38, me te 2 e toe mai ana.		
Ka whakaotia te hātepe ūkawa poto mō te whakarea me te whakawehē (tau matitoru ki te tau matitahi).	<p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuarua, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • He Iwi Kē, he Tikanga Kē (wh.4) 	
Ngā Rautaki	Te Panuku o ngā Rapanga	Ngā Rauemi e Hāngai ana
Ka whakamahia te rautaki ‘wāwāhi uara tū’ hei whakaoti rapanga whakarea (arā, te āhuatanga tātai tohatoha o te whakarea).	$44 \times 3 = \square \rightarrow 40 \times 3 + 4 \times 3$ $27 \times 7 = \square \rightarrow 20 \times 7 + 7 \times 7$ $53 \times 9 = \square \rightarrow 50 \times 9 + 3 \times 9$ $36 \times 8 = \square \rightarrow 30 \times 8 + 6 \times 8$ $217 \times 4 = \square \rightarrow 200 \times 4 + 10 \times 4 + 7 \times 4$	<p><i>TPT, Pukapuka 6:</i></p> <ul style="list-style-type: none"> • Ngā kōrero whakataki mō te Kaupae 6-7 (wh.71) • Rautaki Whakarea Whānui (wh.84) <p><i>He Tau Anō Te Tau: Te Tau, Taumata 3:</i></p> <ul style="list-style-type: none"> • Ngā Tini Tari (wh.22) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuarua, Taumata 3:</i></p> <ul style="list-style-type: none"> • He Tātaitanga Kapa Haka (wh.7) • Kei Ngaro! (wh.8) • Pērā Rawa te Pakeke? (wh.12) • Tiakareti Tuawhiti (wh.15) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuatoru, Taumata 3:</i></p> <ul style="list-style-type: none"> • Piataata Ana! (wh.12) <p><i>He Tau Anō Te Tau: Te Tau, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • He Rerekē te Āhua, he Rite te Otinga (wh.17) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuatoru, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • Kia Tika te Tapatapahi i te Tōtiti (wh.14) <p><i>He Tau Anō Te Tau: Ngā Meka Matua, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • He Whātoro Whakarea (wh.2)

<p>Ka whakaoti rapanga tāpiri, rapanga tango hoki, e whai wāhi mai ana te tau tōpū (arā, he tau tōraro, he tau tōrunga).</p>	$+2 + 3 = \square$ $-4 + -1 = \square$ $+4 + -5 = \square$ $-2 + -8 = \square$ $+6 - 5 = \square$ $-7 - -3 = \square$ $+5 - -2 = \square$ $-3 - +7 = \square$	<p><i>TPT, Pukapuka 5:</i></p> <ul style="list-style-type: none"> • Utua mai, Utua atu (wh.172) • He Puke, he Hāpua (wh.174) <p><i>TPT, Pukapuka 8:</i></p> <ul style="list-style-type: none"> • Te Tau Tōraro me te Tangohanga (wh.86) <p><i>He Tau Anō Te Tau: Te Tau, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • Kei Riro i te Korokoro o te Mako (wh.23) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuatoru, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • Ngā Ahi Tipua o Aotearoa (wh.20) • Ka Teitei Ake, ka Makariri Ake (wh.22)
<p>Ka whakamahia te rautaki ‘te tau māmā me te tikanga paremata’ hei whakaoti rapanga whakarea (arā, te āhuatanga tātai tohatoha o te whakarea).</p>	$26 \times 4 = \square \rightarrow 25 \times 4 + 1 \times 4$ $99 \times 6 = \square \rightarrow 100 \times 6 - 1 \times 6$ $48 \times 7 = \square \rightarrow 50 \times 7 - 2 \times 7$ $47 \times 8 = \square \rightarrow 50 \times 8 - 3 \times 8$ $248 \times 6 = \square \rightarrow 250 \times 6 - 2 \times 6$	<p><i>TPT Pukapuka 6:</i></p> <ul style="list-style-type: none"> • Rautaki Whakarea Whānui (wh.84) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuarua, Taumata 3:</i></p> <ul style="list-style-type: none"> • He Tikanga Maha (wh.10) <p><i>He Tau Anō Te Tau: Te Tau, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • Me Penapena ka Tika (wh.15) • He Rautaki Whakarea (wh.16)
<p>Ka whakamahia te rautaki ‘pānga riterite’ pērā i te rearua me te haurua, te reatoru me te hautoru, hei whakaoti rapanga whakarea.</p>	$6 \times 4 = \square, nō reira, \square \times 2 = 24$ $\square \times 3 = 24$ $10 \times 12 = \square, nō reira, 5 \times \square = 120$ $\square \times 6 = 120$ $8 \times 9 = \square, nō reira, \square \times 3 = 72$ $4 \times \square = 72$ $4 \times 16 = \square \rightarrow 8 \times 8 = \square$ $5 \times 468 = \square \rightarrow 10 \times 234 = \square$ $33 \times 18 = \square \rightarrow 99 \times 6 = \square$	<p><i>TPT, Pukapuka 6:</i></p> <ul style="list-style-type: none"> • Tapahia, ka Whakapiri ai (wh.79) <p><i>TPT, Pukapuka 8:</i></p> <ul style="list-style-type: none"> • Te Rearua me te Haurua (wh.40) • Whakareatia ki te 25 (wh.42)
<p>Ka whakamahia te rautaki ‘wāwāhi uara tū’ hei whakaoti rapanga whakawehe, me te mōhio anō ki te tuhinga ōkawa. Hei tauira:</p> $\begin{array}{r} 44 \\ 8 \sqrt{352} \\ \hline 32 \\ \hline 32 \end{array}$	$96 \div 4 = \square \rightarrow 80 \div 4 = 20 \text{ me te}$ $16 \div 4 = 4$ $135 \div 5 = \square \rightarrow 100 \div 5 = 20 \text{ me te}$ $35 \div 5 = 7$ $189 \div 3 = \square \rightarrow 180 \div 3 = 60 \text{ me te}$ $9 \div 3 = 3$ $414 \div 9 = \square \rightarrow 360 \div 9 = 40 \text{ me te}$ $54 \div 9 = 6$ $296 \div 8 = \square \rightarrow 240 \div 8 = 30 \text{ me te}$ $56 \div 8 = 7$ $318 \div 6 = \square \rightarrow 300 \div 6 = 50 \text{ me te}$ $18 \div 6 = 3$	<p><i>TPT, Pukapuka 6:</i></p> <ul style="list-style-type: none"> • Te Hātepe Ōkawa (wh.100) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuatoru, Taumata 3:</i></p> <ul style="list-style-type: none"> • Piua Mai ō Kapa ki te Pōtae! (wh.11) • He Tuha Uka, he Kai Uka (wh.18)

<p>Ka whakamahia te rautaki ‘te tau māmā me te tikanga paremata’ hei whakaoti rapanga whakawehē.</p>	$100 \div 4 = 25$, nō reira, $96 \div 4 = \square$ $180 \div 3 = 60$, nō reira, $162 \div 3 = \square$ $490 \div 7 = 70$, nō reira, $476 \div 7 = \square$ $640 \div 8 = 80$, nō reira, $616 \div 8 = \square$ $810 \div 9 = 90$, nō reira, $792 \div 9 = \square$	<p>TPT, Pukapuka 6:</p> <ul style="list-style-type: none"> • Te Hātepē Ōkawa (wh.100) <p>He Tau Anō Te Tau: Te Tau, Taumata 3-4:</p> <ul style="list-style-type: none"> • Wehe ana i te Rekareka! (wh.18)
<p>Ka whakamahia te rautaki ‘wāwāhia he tauwehe’ hei whakaoti rapanga whakarea, rapanga whakawehē hoki.</p>	$4 \times 44 = \square \rightarrow 2 \times 2 \times 44$ $8 \times 57 = \square \rightarrow 2 \times 2 \times 2 \times 57$ $12 \times 23 = \square \rightarrow 2 \times 2 \times 3 \times 23$ $72 \div 4 = \square \rightarrow 72 \div 2 \div 2 = \square$ $184 \div 8 = \square \rightarrow 184 \div 2 \div 2 \div 2 = \square$ $396 \div 6 = \square \rightarrow 396 \div 3 \div 2 = \square$	<p>TPT, Pukapuka 6:</p> <ul style="list-style-type: none"> • Mā te Tauwehe (wh.118)
<p>Ka whakamahia te rautaki ‘pānga riterite’ hei whakaoti rapanga whakawehē. Hei tauira, ko te haurua me te rearua, ko te hautoru me te reatoru.</p>	$52 \div 4 = \square \rightarrow 26 \div 2 = \square$ $208 \div 8 = \square \rightarrow 104 \div 4 = \square$, $52 \div 2 = \square$ $408 \div 12 = \square \rightarrow 204 \div 6 = \square$, $102 \div 3 = \square$ $378 \div 27 = \square \rightarrow 42 \div 3 = \square$	<p>TPT, Pukapuka 6:</p> <ul style="list-style-type: none"> • Hākari (wh.92) <p>TPT, Pukapuka 8:</p> <ul style="list-style-type: none"> • Te Tikanga o te Tohu Ōrite (wh.33)
<p>Ka whakamahia te rautaki ‘pānga riterite’ hei whakaoti rapanga whakawehē.</p>	$24 \div 4 = 6$, nō reira, $24 \div 8 = \square$, $24 \div 2 = \square$ $40 \div 10 = 4$, nō reira, $40 \div 5 = \square$, $40 \div 20 = \square$ $72 \div 9 = 8$, nō reira, $72 \div 3 = \square$, $72 \div 18 = \square$ $56 \div 8 = 7$, nō reira, $56 \div 16 = \square$, $56 \div 4 = \square$ $1,000 \div 2 = 500$, nō reira, $1,000 \div 4 = \square$, $1,000 \div 8 = \square$	<p>TPT, Pukapuka 6:</p> <ul style="list-style-type: none"> • Te Pānga Riterite hei Whakaoti Whakawehenga (wh.88)
<p>Ka whakamahia te rautaki ‘te wāwāhi uara tū’hei whakaoti rapanga whakarea, whakawehē hoki, me te mōhio hoki ki te hātepē ōkawa mō te whakarea.</p>	$10 \times 20 = 200$, nō reira, $14 \times 23 = \square$ $20 \times 40 = 800$, nō reira, $23 \times 47 = \square$ $50 \times 40 = 2,000$, nō reira, $53 \times 46 = \square$ $900 \div 30 = 30$, nō reira, $1,080 \div 30 = \square$ $4,000 \div 80 = 50$, nō reira, $3,840 \div 80 = \square$ $10,000 \div 100 = 100$, nō reira, $10,000 \div 25 = \square$	<p>TPT, Pukapuka 6:</p> <ul style="list-style-type: none"> • Whakareatanga Whakawhitī (wh.105) <p>He Tau Anō Te Tau: Te Tau, Pukapuka Tuatoru, Taumata 3-4:</p> <ul style="list-style-type: none"> • He Tauira Tau (wh.8) • E Hia? (wh.12)

<p>Ka whakaoti rapanga whakawehe e whai toenga ana, ā, ka whakaaturia te toenga hei tauotī, hei hautau, hei tauā-ira rānei, i runga anō i te horopaki.</p> <p>Hei tauira:</p> <ul style="list-style-type: none"> • $38 \div 4 = 9$ t2 • $38 \div 4 = 9.5$ • $38 \div 4 = 9\frac{1}{2}$ 	$34 \div 2 = 17$, nō reira, $35 \div 2 = \square$ $75 \div 5 = 15$, nō reira, $78 \div 5 = \square$ $64 \div 4 = 16$, nō reira, $67 \div 4 = \square$ $51 \div 3 = 17$, nō reira, $53 \div 3 = \square$ $200 \div 8 = 25$, nō reira, $205 \div 8 = \square$ $480 \div 24 = 20$, nō reira, $486 \div 24 = \square$	<p><i>TPT, Pukapuka 6:</i></p> <ul style="list-style-type: none"> • He Toenga (wh.96) <p><i>He Tau Anō Te Tau: Ngā Meka Matua, Taumata 3:</i></p> <ul style="list-style-type: none"> • He Taonga Tonu te Toenga (wh.22)
<p>Ka whakamahia ngā ture whakawehe mō te 2, te 3, te 4, te 5, te 6, te 8 me te 9.</p>	<p>He taurea ēnei o te 4 me te 8? 132, 248, 481, 925, 2,412, 6,664</p> <p>He taurea ēnei o te 3 me te 9? 72, 144, 267, 496, 1,002</p> <p>He taurea ēnei o te 6? 108, 243, 522, 963</p>	<p><i>TPT, Pukapuka 6:</i></p> <ul style="list-style-type: none"> • Whakawehē ki te Iwa, ki te Toru rānei (wh.108) <p><i>TPT, Pukapuka 8:</i></p> <ul style="list-style-type: none"> • Te Whakamātau Whakawehenga (wh.93) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuatoru, Taumata 3:</i></p> <ul style="list-style-type: none"> • Ngā Iwa Māmā (wh.14) <p><i>He Tau Anō Te Tau: Ngā Meka Matua, Taumata 3:</i></p> <ul style="list-style-type: none"> • Kei te Mataono te Kōrero (wh.20)
<p>Ka mōhio ki te whakarea, ki te whakawehe hoki i tētahi tau ki te 10, ki te 100, ki te 1,000, ki tētahi atu taupū rānei o te 10.</p>		<p><i>TPT, Pukapuka 6:</i></p> <ul style="list-style-type: none"> • He Māmā te Pūnaha Tekau (wh.74)
<p>Ka whakaoti rapanga e whai wāhi mai ana te raupapatanga o ngā paheko e whā.</p>		<p><i>He Tau Anō Te Tau: Ngā Meka Matua, Taumata 3:</i></p> <ul style="list-style-type: none"> • Te Hanga Tau (wh.24) <p><i>He Tau Anō Te Tau: Te Tau, Taumata 3:</i></p> <ul style="list-style-type: none"> • He Pātene Pakaru (wh.19) • Te Papa Patopato (wh.21) • He Koeko Tapawhā (wh.23) <p><i>He Tau Anō Te Tau: Te Tau, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • He Rapanga o Ia Rā (wh.20) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuarua, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • He Iwi Kē, he Tikanga Kē (wh.4) • Kia Mākona te Katoa (wh.5) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuatoru, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • He Tauira Tau (wh.8)

Ngā Whāinga Paetae: Te Tau, Taumata 4

Mahere Tau	0	1	2	3	4	5	6	7	8
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4.1 (Mātauranga Tau)

Ka mōhio ki: ngā meka whakawehē matua; te whakaawhiwhi tauoti, tau ā-ira hoki.

4.2 (Mātauranga Tau)

Ka mōhio ki ngā tikanga o: te tau tōraro me te tau tōrunga; te tau toitū; te ūwehenga; te uara tū o ngā tau ā-ira; te maha o ngā haumano, ngā haurau, ngā hautekau, ngā tahi, ngā tekau, ngā rau me ngā mano kei roto i tētahi tau ā-ira (tae atu kia 3 ngā mati ā-ira).

4.3 (Mātauranga Tau)

Ka mōhio ki te kimi mai i ngā taurea me ngā tauwehe o tētahi tau.

4.4 (Mātauranga Tau)

Ka mōhio ki ngā hautau, ngā tau ā-ira, ngā ūrau me ngā ūwehenga māmā: ngā huringa hautau ↔ tau ā-ira ↔ ūrau; ngā raupapa tatauranga tau ā-ira (haumano, haurau, hautekau); te raupapa hautau, tau ā-ira, ūrau hoki; te whiriwhiri hautau ūrite.

4.5 (Rautaki Tau)

Ka kōwhiri, ka whakamārama i te rautaki e tino whaihua ana hei whakaotī rapanga e whai wāhi mai ana te tauoti, te hautau, te tau ā-ira, te ūrau, te ūwehenga, te tau tōpū me te taupū māmā: rautaki tatau; rautaki tāpiripiri; rautaki whakarea; rautaki pānga riterite māmā.

4.6 (Rautaki Tau)

Ka mārama ki te whaitakenga o te otinga o tētahi rapanga.

Te Mātauranga	Ngā Rauemi e Hāngai ana
<p>Ka raupapahia ngā tau ā-ira, kia toru ngā mati ā-ira. Hei tauira: 6.25 < 6.3</p>	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Kōwhiuwhiu Tau (wh.36) • He Whare Uara Tū (wh.38) • Ko Wai ka Toa? (wh.48) • Te Hautanga ā-Ira (wh.63) • Hautau Ōrite Huhua (wh.73) <p><i>He Tau Anō Te Tau: Te Tau, Taumata 3:</i></p> <ul style="list-style-type: none"> • Te Tātai Tau ā-ira (wh.15) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuarua, Taumata 3:</i></p> <ul style="list-style-type: none"> • He Tārai Tauākī (wh.20)
<p>Ka raupapahia ngā hautau, pērā i ngā haurua, ngā hautoru, ngā hauwhā, ngā haurima me ngā hautekau.</p>	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Raupapahia ngā Kāri (wh.10) • Raupapahia (wh.17) • He Aho Pirepire (wh.23) • Kei a Wai te Keke Nui? (wh.42) • Te Raupapa Hautau (wh.49) • Te Hautau ki te Papa Tīrau 1 (wh.56) • Te Hautau ki te Papa Tīrau 2 (wh.58) • Ngā Hautau Waetahi-kore (wh.59) • He Pākete Rare (wh.60) • Te Hautanga ā-Ira (wh.63) <p><i>He Tau Anō Te Tau: Ngā Tau, Taumata 2-3:</i></p> <ul style="list-style-type: none"> • Wāhanga Porohita (wh.17) • Hautau Hirahira (wh.18) • E Hia? (wh.20)

<p>Ka mōhio ki ngā huringa hautau ↔ tau ā-ira ↔ ūrā mō ngā haurau, ngā hautoru, ngā hauwhā, ngā haurima me ngā hautekau.</p>	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Hautanga Ōrite (wh.51) • He Aho Pirepire (wh.23) <p><i>He Tau Anō Te Tau: Te Tau, Taumata 3:</i></p> <ul style="list-style-type: none"> • Te Hautau hei Tau ā-ira (wh.13) <p><i>He Tau Anō Te Tau: Te Tau, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • Tirohia te Pepa (wh.11) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuarua, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • He Tūhonohono Hautau (wh.15) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuatoru, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • Ai e Hika e! (wh.24) <p><i>He Tau Anō Te Tau: Ngā Meka Matua, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • Te Whiriwhiri Tau ā-Ira (wh.21) • Te Toa Tau ā-Ira (wh.24) 	
<p>Ka mōhio ki ngā hautau ūrite mō ngā haurua, ngā hautoru, ngā hauwhā, ngā haurima me ngā hautekau.</p>	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • He Nui Ake te Hauwhā i te Haurua! (wh.44) • Ngā Hautanga ki te Rārangī Tau (wh.46) • Hautanga Ōrite (wh.51) • Hautau ūrite Huhua (wh.73) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuatahi, Taumata 3:</i></p> <ul style="list-style-type: none"> • Ka Hau ngā Hautau (wh.9) • He Hautau Anō (wh.10) • Kei Ngoungou Haere (wh.11) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuatoru, Taumata 3:</i></p> <ul style="list-style-type: none"> • He Rerekē, engari he Rite (wh.22) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuarua, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • He Hautau Hanawiti (wh.11) 	
<p>Ka whakaawhiwhi tau ā-ira (tae atu kia rua ngā mati ā-ira), ki te tauoti, ki te hautekau rānei e pātata ana.</p>	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Whakaawhiwhinga Whaitake (wh.70) • Whakaawhiwhia ki te Tekau (wh.94) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuatoru, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • Hoea, Hoea Rā (wh.6) 	
Ngā Rautaki	Te Panuku o ngā Rapanga	Ngā Rauemi e Hāngai ana
<p>Ka wāwāhi hautanga hei whiriwhiri hautau ūrite. Hei tauira: $\frac{3}{4} = \frac{15}{20}$, mā te wāwāhi i ia hauwhā kia 5 ngā wehenga ūrite.</p>	<p>Wāwāhia te $\frac{1}{3}$ kia 4 ngā wehenga ūrite. He aha te hautau ūrite? ($\frac{1}{3} = \frac{4}{12}$)</p> <p>Wāwāhia te $\frac{1}{5}$ kia 3 ngā wehenga ūrite. He aha te hautau ūrite? ($\frac{1}{5} = \frac{3}{15}$)</p> <p>Wāwāhia te $\frac{1}{6}$ kia 2 ngā wehenga ūrite. He aha te hautau ūrite? ($\frac{1}{6} = \frac{2}{12}$)</p> <p>Wāwāhia te $\frac{1}{2}$ kia 6 ngā wehenga ūrite. He aha te hautau ūrite? ($\frac{1}{2} = \frac{6}{12}$)</p>	<p><i>TPT, Pukapuka 7:</i></p> <ul style="list-style-type: none"> • Ngā kōrero whakataki mō te Kaupae 6–7 (wh.57) <p><i>TPT, Pukapuka 8:</i></p> <ul style="list-style-type: none"> • Te Hautau ūrite (wh.46) <p><i>He Tau Anō Te Tau: Te Tau, Taumata 3:</i></p> <ul style="list-style-type: none"> • Ka Hau ngā Hautau (wh.9) • He Hautau Anō (wh.10) • Kia Tere te Piki! (wh.14)

	$\frac{1}{4} = \frac{\square}{16}$ $\frac{1}{6} = \frac{\square}{36}$ $\frac{3}{4} = \frac{\square}{28}$ $\frac{3}{5} = \frac{9}{\square}$ $\frac{7}{8} = \frac{28}{\square}$ $\frac{9}{10} = \frac{\square}{1,000}$	<p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuatoru, Taumata 3:</i></p> <ul style="list-style-type: none"> • He Rerekē, Engari he Rite (wh.22) <p><i>He Tau Anō Te Tau: Te Tau, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • Te Moana Nui a Tīpa (wh.3) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuarua, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • He Hautau Hanawiti (wh.11)
Ka whakamahia ngā hautau māmā e mōhiotia ana me ngā hautau ūrite, hei raupapa hautau. Hei tauira: $\frac{2}{5} < \frac{7}{16}$ nā te mea $\frac{2}{5} = \frac{4}{10}$, ā, $\frac{1}{10}$ te itinga ake o tērā i te $\frac{1}{2}$, engari $\frac{1}{16}$ te itinga ake o te $\frac{7}{16}$ i te $\frac{1}{2}$.	Ko tēhea te hautau rahi ake? He pēhea nei te rahinga ake? te $\frac{3}{4}$, te $\frac{2}{3}$ rānei te $\frac{4}{5}$, te $\frac{3}{4}$ rānei te $\frac{5}{8}$, te $\frac{2}{3}$ rānei te $\frac{5}{8}$, te $\frac{7}{12}$ rānei te $\frac{3}{8}$, te $\frac{4}{10}$ rānei te $\frac{5}{6}$, te $\frac{3}{4}$ rānei te $\frac{17}{12}$, te $\frac{5}{4}$ rānei te $\frac{7}{3}$, te $\frac{11}{5}$ rānei	<p><i>TPT Pukapuka 8:</i></p> <ul style="list-style-type: none"> • Te Whakatau Tata i ngā Hautau (wh.44) • Te Hautau ūrite (wh.46)
Ka whakamahia ngā meka whakarea, whakawehe hoki, hei whiriwhiri i te hautanga o tētahi tauoti. Hei tauira: $\frac{2}{3} \text{ o te } 36 = 2 \times \frac{1}{3} \text{ o te } 36$ = $2 \times 36 \div 3$ = 2×12 = 24	$\frac{3}{5} \text{ o te } 60 = \square$ $\frac{5}{8} \text{ o te } 64 = \square$ $\frac{5}{6} \text{ o te } 42 = \square$ $\frac{4}{7} \text{ o te } 56 = \square$ $\frac{3}{5} \text{ o te } \square = 27$ $\frac{4}{9} \text{ o te } \square = 16$ $\frac{7}{10} \text{ o te } \square = 84$ $\frac{\square}{8} \text{ o te } 72 = 27$ $\frac{\square}{12} \text{ o te } 48 = 28$	<p><i>TPT, Pukapuka 8:</i></p> <ul style="list-style-type: none"> • Te Whakarea i te Hautau ki te Tauoti (wh.65) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuarua, Taumata 3:</i></p> <ul style="list-style-type: none"> • Ka Huri te Ihu ki te Wā Kāinga (wh.24) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuatoru, Taumata 3:</i></p> <ul style="list-style-type: none"> • He Māpere Miharo (wh.21) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuarua, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • Te Waihangā Hautau (wh.12) • Tēnā Inea! (wh.13) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuatoru, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • He Hautau Hākinakina (wh.16)
Ka whakaoti rapanga e whai wāhi mai ana te whakareatanga hautau ki te hautau. Hei tauira: $\frac{2}{3} \times \frac{3}{4} = \frac{6}{12} = \frac{1}{2}$	$\frac{1}{2} \times \frac{3}{4} = \square$ $\frac{2}{3} \times \frac{3}{5} = \square$ $\frac{3}{4} \times \frac{2}{5} = \square$ $\frac{5}{8} \times \frac{1}{2} = \square$ $\frac{2}{3} \times \frac{1}{5} = \square$ $\frac{5}{6} \times \frac{2}{3} = \square$	<p><i>TPT, Pukapuka 8:</i></p> <ul style="list-style-type: none"> • Te Whakarea i te Hautau ki te Hautau (wh.67) • He Whakanui, he Whakaiti rānei te Whakarea (wh.69)

<p>Ka whakaoti whakawehenga hei huri i ngā hautau nui ake i te tahi hei tau hanumi.</p> <p>Ka whakanoho hautau nui ake i te tahi ki te rārangī tau.</p>	<p>Hurihia ēnei hautau hei tau hanumi, ka whakaatu ai ki tētahi rārangī tau:</p> $\frac{27}{4} \quad \frac{43}{5} \quad \frac{23}{3} \quad \frac{65}{9} \quad \frac{76}{8} \quad \frac{100}{3}$	<p><i>TPT, Pukapuka 8:</i></p> <ul style="list-style-type: none"> • He Hautau Nui Ake i te Kotahi (wh.49)
<p>Ka whakaoti rapanga whakawehenga e whai wāhi mai ana te otinga hautanga. Hei tauira: $8 \div 3 = 2\frac{2}{3}$</p> <p>Ka tūhonoa te whakawehenga ki te taurunga me te tauraro o tētahi hautau. Hei tauira: $4 \div 5 = \frac{4}{5}$</p>	$5 \div 4 = \square$ $8 \div 3 = \square$ $12 \div 5 = \square$ $5 \div 6 = \square$ $3 \div 7 = \square$ $13 \div 8 = \square$ $1 \div \square = \frac{1}{7}$ $7 \div \square = \frac{21}{3}$ $2 \div \square = \frac{2}{3}$ $17 \div \square = 1\frac{7}{10}$ $\square \div 3 = 3\frac{1}{3}$ $\square \div 5 = 1\frac{4}{5}$ $\square \div 6 = 1\frac{5}{6}$ $\square \div 9 = 4\frac{8}{9}$	<p><i>He Tau Anō Te Tau: Te Tau, Taumata 3:</i></p> <ul style="list-style-type: none"> • Te Hautau hei Tau ā-Ira (wh.13)
<p>Ka whakaotia ngā huringa hautau ↔ tau ā-ira ↔ ūrau.</p>	$3 \div 2 = 1\frac{1}{2} = 1.5 = 150\%$ $5 \div 4 = 1\frac{1}{4} = 1.25 = 125\%$ $3 \div 8 = \frac{3}{8} = 0.375 = 37.5\%$ $2 \div 3 = \frac{2}{3} = 0.6 = 66.6\%$ $\frac{7}{5} = 1\frac{2}{5} = 1.4 = 140\%$ $\frac{5}{7} = \square$	<p><i>TPT, Pukapuka 7:</i></p> <ul style="list-style-type: none"> • Te Papa Hautanga ā-Ira (wh.67) <p><i>He Tau Anō Te Tau: Ngā Meka Matua, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • Te Whiriwhiri Tau ā-Ira (wh.21) • Te Toa Tau ā-Ira (wh.24) <p><i>He Tau Anō Te Tau: Te Tau, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • Ngā Ākinga a te Tai (wh.8) • Huripokia (wh.10) • Tirohia te Pepa (wh.11)
<p>Ka whakamahia ngā ūrau māmā e mōhiotia ana hei whakatau tata, hei whiriwhiri i te ūrau o tētahi tauotī. Hei tauira:</p> $65\% \text{ o te } \$80 = (50\% \text{ o te } \$80) + (10\% \text{ o te } \$80) + (5\% \text{ o te } \$80)$ $= \$40 + \$8 + \$4$ $= \$52$	$10\% \text{ o te } 48 \leftrightarrow 30\% \text{ o te } 48$ $50\% \text{ o te } 64 \leftrightarrow 25\% \text{ o te } 64$ $10\% \text{ o te } 28 \leftrightarrow 5\% \text{ o te } 28$ $50\% \text{ o te } 56, 10\% \text{ o te } 56 \leftrightarrow 60\% \text{ o te } 56$ $10\% \text{ o te } 35, 5\% \text{ o te } 35 \leftrightarrow 15\% \text{ o te } 35$ $50\% \text{ o te } 140, 10\% \text{ o te } 140, 5\% \text{ o te } 140 \leftrightarrow 65\% \text{ o te } 140$	<p><i>TPT Pukapuka 7:</i></p> <ul style="list-style-type: none"> • Ringa Tītere (wh.82) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuarua, Taumata 3:</i></p> <ul style="list-style-type: none"> • Te Toa Pukapuka Utupai (wh.18) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuatoru, Taumata 3:</i></p> <ul style="list-style-type: none"> • Whakaheke Utu, Whakaheke Ngaru (wh.24) <p><i>He Tau Anō Te Tau: Te Tau, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • Te Ringa Tītere (wh.12)

		<p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuarua, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • Ka Piki Tonu te Utu (wh.16)
Ka whakaoti tāpiritanga hautau, tangohanga hautau hoki mēnā e whai pānga ana ngātauraro. Hei tauira:	$\frac{3}{4} + \frac{3}{4} = \frac{6}{4} = 1\frac{1}{2}$ $\frac{2}{3} + \frac{4}{3} = \frac{6}{3} = 2$ $\frac{4}{5} - \frac{2}{5} = \frac{2}{5}$ $\frac{3}{4} + \frac{5}{8} = \frac{11}{8} = 1\frac{3}{8}$ $\frac{9}{10} - \frac{3}{5} = \frac{3}{10}$ $\frac{2}{3} + \frac{5}{6} = \frac{9}{6} = 1\frac{1}{2}$ $\frac{7}{8} - \frac{1}{2} = \frac{3}{8}$	<p><i>TPT Pukapuka 7:</i></p> <ul style="list-style-type: none"> • Hautau Tāpiripiri, Hautau Tangotango (wh.111) <p><i>TPT Pukapuka 8:</i></p> <ul style="list-style-type: none"> • Te Whakatau Tata i ngāHautau (wh.44) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuatoru, Taumata 3:</i></p> <ul style="list-style-type: none"> • Te Whakaapaapa Haere (wh.20)
Ka whakaoti rapanga e whai wāhi mai ana te tāpiri me te tango hautau.	$1.2 + 3.8 = 4$ $0.75 + 1.25 = 2$ $5 - 2.25 = 2.75$ $0.5 + 1.25 = 1.75$ $2.5 - 1.75 = 0.75$ $0.375 + 1.625 = 2$ $3 - 0.001 = 2.999$ $2.673 + 1.327 = 4$ $5.2 - 1.68 = 3.52$	<p><i>TPT Pukapuka 5:</i></p> <ul style="list-style-type: none"> • Te Tāpiri Hautau ā-Ira (1) (wh.158) • Te Tango Hautau ā-Ira (1) (wh.160) <p><i>TPT Pukapuka 7:</i></p> <ul style="list-style-type: none"> • He Paipa ā-Ira (wh.61) • Tāpiritanga Tau ā-Ira Māmā (wh.74) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuarua, Taumata 3:</i></p> <ul style="list-style-type: none"> • Te Tapeke hei Whakamaunga Atu (wh.16) • Te Tātaitanga Tau ā-Ira (wh.17) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuatoru, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • Te Eke Ngaru (wh.2)
Ka whakaoti rapanga whakawehē e whai wāhi mai ana he hautau, e whai pānga ana ngātauraro. Hei tauira:	E hia ngā: $\frac{1}{4}$ kei roto i te $\frac{3}{2}$ ($\frac{3}{2} \div \frac{1}{4} = \frac{6}{4} \div \frac{1}{4} = 6$) $\frac{1}{10}$ kei roto i te $\frac{4}{5}$ ($\frac{4}{5} \div \frac{1}{10} = \frac{8}{10} \div \frac{1}{10} = 8$) $\frac{1}{6}$ kei roto i te $\frac{5}{3}$ ($\frac{5}{3} \div \frac{1}{6} = \frac{10}{6} \div \frac{1}{6} = 10$) $\frac{3}{4}$ kei roto i te $4\frac{1}{2}$ ($\frac{9}{2} \div \frac{3}{4} = \frac{18}{4} \div \frac{3}{4} = 6$) $\frac{3}{8}$ kei roto i te $\frac{9}{4}$ ($\frac{9}{4} \div \frac{3}{8} = \frac{18}{8} \div \frac{3}{8} = 6$) $\frac{5}{12}$ kei roto i te $\frac{10}{3}$ ($\frac{10}{3} \div \frac{5}{12} = \frac{40}{12} \div \frac{5}{12} = 8$)	<p><i>TPT, Pukapuka 8:</i></p> <ul style="list-style-type: none"> • Te Whakawehē Hautau (wh.62)
Ka rauapapahia ngātauā-ira ki tētahi rārangitau.	Tuhia he rārangitau mai i te 0 ki te 5, ka whakaatu ai i ēnei: 2.5, 1.25, 4.9, 3.75, 0.67 Tuhia he rārangitau mai i te 0 ki te 2, ka whakaatu ai i ēnei: 0.2, 1.8, 0.66, 1.95, 1.125	<p><i>TPT, Pukapuka 8:</i></p> <ul style="list-style-type: none"> • Te Āwhata i te Rārangitau (wh.54) • Te Whakaawhiwhi Tauoti (wh.57) • He Hautau, he Tau ā-Ira Pōraruraru (wh.59)

<p>Ka whakaoti rapanga ōwehenga māmā, mā te whakareatanga. Hei tauira: He ūrite te utu i te \$7 mō te $\frac{1}{2}$ kg me te utu i te \$21 mō te $1\frac{1}{2}$ kg.</p>	<p>Te hoko waiārani:</p> <p>E \$4 mō te 1 rita = \$32 mō te 8 rita</p> <p>E \$7 mō te 2 rita = \$35 mō te 10 rita</p> <p>E \$3 mō te $\frac{1}{2}$ rita = \$18 mō te 3 rita</p> <p>E \$9 mō te $1\frac{1}{2}$ rita = \$36 mō te 6 rita</p> <p>E \$5 mō te $\frac{3}{4}$ rita = \$40 mō te 6 rita</p>	<p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuatoru, Taumata 3:</i></p> <ul style="list-style-type: none"> • Ngā Tau Rererua (wh.2) <p><i>He Tau Anō Te Tau: Te Tau, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • He Rā Anō, he Rapanga Anō (wh.21) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuarua, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • He Piko, he Taniwha! (wh.19) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuatoru, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • He Tākiri Hinengaro (wh.4) • Kakapa Ana te Manawa (wh.11)
<p>Ka whakamahia te whakarea me te whakawehe hei whirihiri ōwehenga ūrite, me te whakaatu anō hei hautau ūrite. Hei tauira:</p> <p>$16:8 = 8:4 = 4:2 = 2:1$, me te rite ki: $\frac{16}{24} = \frac{8}{12} = \frac{4}{6} = \frac{2}{3}$</p>	$10:15 = 2:3 \leftrightarrow \frac{10}{25} = \frac{2}{5}$ $20:10 = 10:5 = 2:1 \leftrightarrow \frac{20}{30} = \frac{10}{15} = \frac{2}{3}$ $12:36 = 6:18 = 3:9 = 1:3 \leftrightarrow \frac{12}{48} = \frac{6}{24} = \frac{3}{12} = \frac{1}{4}$ $18:27 = 6:9 = 2:3 \leftrightarrow \frac{18}{45} = \frac{6}{15} = \frac{2}{5}$ $45:15 = 9:3 = 3:1 \leftrightarrow \frac{45}{60} = \frac{9}{12} = \frac{3}{4}$ $16:48 = 8:24 = 4:12 = 2:6 = 1:3 \leftrightarrow \frac{16}{64} = \frac{8}{32} = \frac{4}{16} = \frac{2}{8} = \frac{1}{4}$	<p><i>TPT, Pukapuka 7:</i></p> <ul style="list-style-type: none"> • Ranunga Peita (wh.87) <p><i>He Tau Anō Te Tau: Te Tau, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • Nā Kukume, ko Roroa (wh.4) • He Kākano Whaikano (wh.9)

Ngā Whāinga Paetae: Te Tau, Taumata 4

Mahere Tau | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8

4.2 (Mātauranga Tau)

Ka mōhio ki ngā tikanga o: te tau tōraro me te tau tōrunga; te tau toitū; te ūwehenga; te uara tū o ngā tau ā-ira; te maha o ngā haumano, ngā haurau, ngā hautekau, ngā tahi, ngā tekau, ngā rau me ngā mano kei roto i tētahi tau ā-ira (tae atu kia 3 ngā mati ā-ira).

4.3 (Mātauranga Tau)

Ka mōhio ki te kimi mai i ngā taurea me ngā tauwehe o tētahi tau.

4.4 (Rautaki Tau)

Ka kōwhiri, ka whakamārama i te rautaki e tino whaihua ana hei whakaoti rapanga e whai wāhi mai ana te tauotī, te hautau, te tau ā-ira, te ūrau, te ūwehenga, te tau tōpū me te taupū māmā: rautaki tatau; rautaki tāpiripiri; rautaki whakarea; rautaki pānga riterite māmā.

4.6 (Rautaki Tau)

Ka mārama ki te whaitakenga o te otinga o tētahi rapanga.

Ngā Whāinga Paetae: Te Tau, Taumata 5

5.1 (Mātauranga Tau)

Ka mōhio ki ngā tikanga o te taupū me te tānga ngahuru.

Te Mātauranga

Ka mōhio ki ngā taupū māmā o ngā tau, tae atu ki te 10. Hei tauira:

- $2^4 = 16$
- $5^3 = 125$

Ka mōhio ki ngā ture whakawehe mō te 2, te 3, te 4, te 5, te 6, te 8, te 9 me te 10. Hei tauira, ka whakawehe pū te 568 ki te 4 nā te mea ka whakawehe pū te 68 ki te 4.

Ka tautohu i ngā tauwehe nui rawa atu me ngā taurea iti rawa atu. Hei tauira, ko te 8 te tauwehe nui rawa atu o te 48 me te 64.

Ka mōhio ki te whakarea, ki te whakawehe hoki i tētahi tauotī, i tētahi tau ā-ira rānei, ki tētahi taupū o te 10.

Hei tauira:

- $4.57 \times 100 = 457$
- $6.3 \div 0.9 = 7$

Ka whai i te hātepe ōkawa poto hei whakaoti whakareatanga, whakawehenga hoki e whai wāhi mai ana te tauotī me te tau ā-ira, ka whakamārama hoki i tēnei rautaki.

Ngā Rautaki	Te Panuku o ngā Rapanga	Ngā Rauemi e Hāngai ana
Ka whakamahia te taupū hei whakaoti rapanga whakarea, me ngā rapanga e whai wāhi mai ana te horahanga me te rōrahi.	$8 \times 16 = \square \rightarrow 2^3 \times 2^4 = 2^7$ $27 \times 243 = \square \rightarrow 3^3 \times 3^5 = 3^8$ $64^2 = \square \rightarrow 4^3 \times 4^3 = 4^6$ $8^2 = 64 \rightarrow \sqrt{64} = \square$	<i>TPT, Pukapuka 6:</i> • He Taupū (wh.112) <i>TPT, Pukapuka 8:</i> • Te Pūrua (wh.80) • Te Pūtakerua (wh.82) • Te Pūtoru me te Pūtaketoru (wh.84)

	$30^2 = 900 \rightarrow \sqrt{900} = \square$ $5^3 = 125 \rightarrow \sqrt[3]{125} = \square$	<i>He Tau Anō Te Tau: Te Tau, Taumata 3-4:</i> <ul style="list-style-type: none"> • He Tirotiro Taupū (wh.22)
<p>Ka whakamahia te rautaki ‘paheko kōaro’ hei whakaoti rapanga whakarea, rapanga whakawehē hoki. Hei tauira: $263 \times \square = 456 \rightarrow 456 \div 263 = \square$</p>	$6 \times \square = 222 \rightarrow 222 \div 6 = 37$ $\square \times 9 = 657 \rightarrow 657 \div 9 = 73$ $2.4 \times \square = 20.64 \rightarrow 20.64 \div 2.4 = 8.6$ $\square \times 0.63 = 23.184 \rightarrow 23.184 \div 0.63 = 36.8$	<i>TPT, Pukapuka 8:</i> <ul style="list-style-type: none"> • Te Huri Kōaro i te Whakareatanga me te Whakawehenga (wh.26)
<p>Ka whakatau tata hei tirotiro i te otinga o tētahi rapanga whakarea, rapanga whakawehē hoki.</p>	$48 \times 32 \approx 50 \times 30 = 1,500$ $196 \times 14 \approx 200 \times 14 = 2,800$ $2,718 \div 9 \approx 2,700 \div 10 = 27$ $3,283 \div 49 \approx 3,300 \div 50 = 4,966$ $7.7 \times 4.3 \approx 8 \times 4 = 32$ $57.6 \div 8.2 \approx 56 \div 8 = 7$ $591.61 \div 88.3 \approx 600 \div 90 \approx 7$	<i>TPT, Pukapuka 8:</i> <ul style="list-style-type: none"> • Te Whakatau Tata hei Tirotiro i te Tika o te Whakareatanga (wh.28) • Te Whakatau Tata hei Tirotiro i te Tika o te Whakawehenga (wh.30) <i>He Tau Anō Te Tau: Te Tau, Taumata 3:</i> <ul style="list-style-type: none"> • Tokohia ka Ō? (wh.4) <i>He Tau Anō Te Tau: Te Tau, Taumata 3-4:</i> <ul style="list-style-type: none"> • Wehe ana i te Rekareka! (wh.18) • Kuhuna ki te Wāhi Tika (wh.19)

Ngā Whāinga Paetae: Te Tau, Taumata 4

Mahere Tau	0	1	2	3	4	5	6	7	8
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4.1 (Mātauranga Tau)

Ka mōhio ki: ngā meka whakawehē matua; te whakaawhiwhi tauoti, tau ā-ira hoki.

4.2 (Mātauranga Tau)

Ka mōhio ki ngā tikanga o: te tau tōraro me te tau tōrunga; te tau toitū; te ūwehenga; te uara tū o ngā tau ā-ira; te maha o ngā haumano, ngā haurau, ngā hautekau, ngā tahi, ngā tekau, ngā rau me ngā mano kei roto i tētahi tau ā-ira (tae atu kia 3 ngā mati ā-ira).

4.3 (Mātauranga Tau)

Ka mōhio ki te kimi mai i ngā taurea me ngā tauwehe o tētahi tau.

4.4 (Mātauranga Tau)

Ka mōhio ki ngā hautau, ngā tau ā-ira, ngā ūrau me ngā ūwehenga māmā: ngā huringa hautau ↔ tau ā-ira ↔ ūrau; ngā raupapa tatauranga tau ā-ira (haumano, haurau, hautekau); te raupapa hautau, tau ā-ira, ūrau hoki; te whiriwhiri hautau ūrite.

4.5 (Rautaki Tau)

Ka kōwhiri, ka whakamārama i te rautaki e tino whaihua ana hei whakaotī rapanga e whai wāhi mai ana te tauoti, te hautau, te tau ā-ira, te ūrau, te ūwehenga, te tau tōpū me te taupū māmā: rautaki tatau; rautaki tāpiripiri; rautaki whakarea; rautaki pānga riterite māmā.

4.6 (Rautaki Tau)

Ka mārama ki te whaitakenga o te otinga o tētahi rapanga.

Ngā Whāinga Paetae: Te Tau, Taumata 5

5.1 (Mātauranga Tau)

Ka mōhio ki ngā tikanga o te taupū me te tānga ngahuru.

5.2 (Rautaki Tau)

Ka kōwhiri, ka whakamārama i te rautaki e tino whaihua ana hei whakaotī rapanga e whai wāhi mai ana te tau tōpū, te hautau, te tau ā-ira, te ūrau, te ūwehenga, te pāpātanga me te taupū: rautaki tatau; rautaki tāpiripiri; rautaki whakarea; rautaki pānga riterite.

5.3 (Rautaki Tau)

Ka whiriwhiri, ka whakamahi tauwehe pātahi, taurea pātahi hoki.

Te Mātauranga	Ngā Rauemi e Hāngai ana
Ka mōhio ki te raupapatanga whakamua, whakamuri, mawhiti-haumano, mawhiti-haurau, mawhiti hautekau, mawhiti-tahi, mawhiti-tekau, mawhiti-rau, mawhiti-mano, ahakoa te tau ā-ira tīmatanga.	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Tātaitai (wh.15) • Kōwhiuwhiu Tau (wh.36) • He Whare Uara Tū (wh.38) • Te Hautanga ā-Ira (wh.63)
Ka mōhio ki te tau, he haumano, he haurau, he hautekau, he tahi, he tekau, he rau, he mano rānei, te rahinga ake, te itinga ake rānei, i tētahi tau.	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Tatau Māwhitiwhiti i te Rārangī Tau (wh.8) • Te Tau ki Mua, te Tau ki Muri (wh.13) • Kōwhiuwhiu Tau (wh.36)
Ka raupapa hautau, tau ā-ira, ūrau hoki.	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Raupapahia (wh.17) • He Aho Pirepore (wh.23) • Kei a Wai te Keke Nui? (wh.42) • He Nui Ake te Hauwhā i te Haurua! (wh.44)

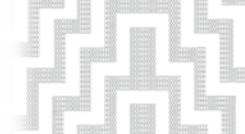
	<ul style="list-style-type: none"> • Ko Wai ka Toa (wh.48) • Te Raupapa Hautau (wh.49) • He Pākete Rare (wh.60) <p><i>He Tau Anō Te Tau: Te Tau, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • Ngā Ākinga a te Tai (wh.8) 	
Ka mōhio ki te maha o ngā haumano, ngā haurau me ngā hautekau kei roto i ngā tau ā-ira (tae atu kia 3 ngā mati ā-ira).	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Te Tikanga Nui o te Kore (wh.69) • Whakawhitia ngā Paparanga Uara Tū (wh.88) 	
Ka mōhio ki te whakarea tauoti, tau ā-ira rānei ki tētahi taupū o te 10.	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Huria te Tau (wh.87) • He Mati Nukunuku (wh.95) 	
Ka whakaawhiwhi tau ā-ira ki te rau, te tekau, te tahī, te hautekau, te haurau rānei e pātata ana.	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Whakaawhiwhia ki te Tekau (wh.94) 	
Ka mōhio ki ngā huringa hautanga: hautau ↔ tau ā-ira ↔ ūrau mō ngā hautanga e tino whakamahia ana, pērā i te hauwaru, te hautekau me ngā hau-rua tekau.	<p><i>TPT, Pukapuka 4:</i></p> <ul style="list-style-type: none"> • Hautanga Ōrite (wh.51) • Te Whakaawhiwhi Hautau hei Ūrau (wh.52) <p><i>He Tau Anō Te Tau: Te Tau, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • Huripokia (wh.10) 	
Ngā Rautaki	Te Panuku o ngā Rapanga	Ngā Rauemi e Hāngai ana
Ka tautohu i ngā tauwehe pātahi hei whiriwhiri ūrehenga ūrite. Ka huri ūrehenga hei hautau, hei ūrau hoki. Hei tauira: $16:48 = 2:6 = 1:3$ (he tauwehe pātahi te 8 me te 16) $1:2 \leftrightarrow \frac{1}{3} = 33\frac{1}{3}\%$	<p>Ko ngā ranunga wai ārani hei horopaki:</p> $6:9 = 16:24 = 2:3$ $6:9 \leftrightarrow \frac{2}{3} = 40\%$ $8:24 = 12:36 = 1:3$ $8:24 \leftrightarrow \frac{8}{32} = \frac{1}{4} = 25\%$ $20:12 = 45:27 = 5:3$ $20:12 \leftrightarrow \frac{20}{32} = \frac{5}{8} = 62.5\%$ $9:12 = 3:4 = 15:20$ $9:12 \leftrightarrow \frac{9}{21} = \frac{3}{7} = 42.86\%$ $28:35 = 4:5$ $28:35 \leftrightarrow \frac{28}{63} = \frac{4}{9} = 44.4\%$	<p><i>TPT, Pukapuka 7:</i></p> <ul style="list-style-type: none"> • Ngā kōrero whakataki mō te Kaupae 7-8 (wh.93) • Ringa Tītere Hikohiko (wh.98) • Ranunga Peita Hikohiko (wh.105)
Ka tāpiri, ka tango hautau e whai wāhi mai ana te tau hanumi me te tauraro rerekē. Hei tauira: $\frac{2}{3} + \frac{3}{4} = \frac{17}{12} = 1\frac{5}{12}$	$\frac{3}{5} + \frac{2}{3} = \frac{19}{15} = 1\frac{4}{15}$ $\frac{7}{8} - \frac{5}{12} = \frac{11}{24}$ $\frac{3}{8} + \frac{5}{6} = \frac{29}{24} = 1\frac{5}{24}$ $\frac{14}{10} - \frac{3}{4} = \frac{13}{20}$ $\frac{3}{4} + \frac{3}{7} = \frac{33}{28} = 1\frac{5}{28}$ $\frac{7}{3} - \frac{7}{11} = \frac{56}{33} = 1\frac{23}{33}$	<p><i>TPT, Pukapuka 7:</i></p> <ul style="list-style-type: none"> • Hautau Tāpiripiri, Hautau Tangotango (wh.111)

<p>Ka whakaoti rapanga e whai wāhi mai ana te whakarea hautau, me te whakawehē tauotī ki te hautau.</p> <p>Ka mōhio ki te tikanga, ina whakawehē tētahi tau ki te hautau iti ake i te kotahi, he nui ake te otingā i te tau tīmatanga.</p> <p>Hei tauira: $4 \div \frac{2}{3} = \frac{12}{3} \div \frac{2}{3} = 6$</p>		<p><i>TPT, Pukapuka 8:</i></p> <ul style="list-style-type: none"> • Te Whakawehē Hautau Uua (wh.64) • He Whakanui, he Whakaiti rānei te Whakawehē? (wh.70)
<p>Ka whakatau tata, ka whakamahi hautanga māmā e mōhiotia ana, hei whakaoti rapanga e whai wāhi mai ana te whakarea me te whakawehē tau ā-ira. Hei tauira:</p> <p>$0.4 \times 2.8 = 1.12$ ($0.4 < \frac{1}{2}$)</p> <p>$8.1 \div 0.3 = 27$ ($81 \div 3$)</p>	<p>$3.2 \times 0.3 = 0.96$</p> <p>$0.72 \times 8 = 5.76$</p> <p>$0.25 \times 2.4 = 0.6$</p> <p>$15 \times 0.33 = 4.95$</p> <p>$5.6 \div 0.7 = 8$</p> <p>$4.8 \div 1.5 = 3.2$</p> <p>$7.2 \div 0.36 = 20$</p> <p>$0.9 \div 0.03 = 30$</p> <p>$24 \div 36 = 0.66$</p>	<p><i>TPT, Pukapuka 7:</i></p> <ul style="list-style-type: none"> • Te Whētui Hautau, Tau ā-Ira (wh.108) <p><i>TPT, Pukapuka 8:</i></p> <ul style="list-style-type: none"> • Te Whakatau Tata (wh.72) • Te Whakarea Hautanga ā-Ira (wh.100) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuarua, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • Te Whakapaipai i te Rūma Moe (wh.6) • Te Pakeke Haere i Tuarangi (wh.8) • Ka Pai te Mātaitaiparai (wh.9) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuatoru, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • Kia Tika te Tapatapahi i te Tōtiti (wh.14)
<p>Ka whakamahi tauwehe pātahi, me te pāpātanga waetahi hei whakaoti rapanga pāpātanga. Hei tauira:</p> <p>490km i te 14 haora → 35km/h (mā te whakawehē ki te 7 kātahi ki te 2).</p>	<p>Ko te horoi motukā, ko te kato huarākau, ko te tawhiti o te haere i te wā hei horopaki:</p> <p>18 i te ono haora, nō reira, e hia i te 15 haora? ($18:6 = 45:15$)</p> <p>$14:21 = 20:30 = 6:9$</p> <p>$56:16 = 21:6 = 7:2$</p> <p>$28:12 = 49:21 = 7:3$</p> <p>$27:36 = 12:16 = 3:4$</p>	<p><i>TPT, Pukapuka 7:</i></p> <ul style="list-style-type: none"> • Te Pāpātanga (wh.121)
<p>Ka whakaoti rapanga whakawehē e whai wāhi mai ana te otingā hautanga.</p> <p>Ka whakaaturia te toenga hei hautau, hei tau ā-ira rānei, i runga anō i te horopaki o te rapanga. Hei tauira:</p> <p>$19 \div 8 = 2$, toenga 3 = $2\frac{3}{8} = 2.375$</p>	<p>$30 \div 4 = 7 \text{ t}2 = 7\frac{1}{2} = 7.5$</p> <p>$17 \div 3 = 5 \text{ t}2 = 5\frac{2}{3} = 5.6\dot{6}$</p> <p>$43 \div 5 = 8 \text{ t}3 = 8\frac{3}{5} = 8.6$</p> <p>$157 \div 10 = 15 \text{ t}7 = 15\frac{7}{10} = 15.7$</p> <p>$90 \div 8 = 11 \text{ t}2 = 11\frac{1}{4} = 11.25$</p> <p>$58 \div 6 = 9 \text{ t}4 = 9\frac{2}{3} = 9.66$</p>	<p><i>TPT, Pukapuka 8:</i></p> <ul style="list-style-type: none"> • E Hia ka Toe mai? (wh.87) • Te Whakamahi Toenga (wh.89)
<p>Ka tūhono, ka wāwāhi ōwehenga, ā, ka huri hei hautau, hei ūrau hoki. Hei tauira:</p> <p>$2:5 \oplus 2:5 \oplus 3:4 = 7:14 = 1:2 \rightarrow \frac{1}{3} \rightarrow 33\frac{1}{3}\%$</p>	<p>$5:6 \oplus 7:12 = 12:18 = 2:3$</p> <p>$9:4 \oplus 7:6 = 16:10 = 8:5$</p> <p>$2:3 \oplus 12:11 = 14:14 = 1:1$</p> <p>$8:5 \oplus 7:5 = 15:10 = 3:2$</p>	<p><i>TPT, Pukapuka 8:</i></p> <ul style="list-style-type: none"> • Te Ōwehenga me te Hautanga hei Tikanga Tohatoha (wh.112)

	$7:2 \oplus 9:4 = 16:6 = 8:3$ $2:5 \oplus 2:5 \oplus 8:5 = 12:15 = 4:5$ $7:3 \oplus 7:3 \oplus 7:3 \oplus 3:7 = 24:16 = 3:2$ $1:3 \oplus 1:3 \oplus 4:5 \oplus 4:5 \oplus 4:5 = 14:21 = 2:3$	
<p>Ka whiriwhiria ngā hautau kei waenganui i ētahi hautau e rua, mā te whakamahi hautanga ūrite, mā te huri hei tau ā-ira, hei ūrau rānei, mā te whakamahi rānei i ngā hautau māmā e mōhiotia ana. Hei tauira:</p> $\frac{3}{5} < \frac{9}{15} < \frac{2}{3}, \quad \frac{9}{15} = \frac{19}{30}$	$10\% \text{ o te } 48 \leftrightarrow 30\% \text{ o te } 48$ $50\% \text{ o te } 64 \leftrightarrow 25\% \text{ o te } 64$ <p>Whiriwhiria he hautau kei waenganui i ēnei:</p> $\text{te } \frac{2}{5} \text{ me te } \frac{1}{2}$ $\text{te } \frac{1}{4} \text{ me te } \frac{3}{10}$ $\text{te } \frac{3}{4} \text{ me te } \frac{4}{5}$ $\text{te } \frac{3}{5} \text{ me te } \frac{7}{12}$ $\text{te } \frac{5}{8} \text{ me te } \frac{7}{12}$ $\text{te } \frac{7}{8} \text{ me te } \frac{9}{10}$ $\text{te } \frac{5}{4} \text{ me te } \frac{6}{5}$ $\text{te } \frac{3}{7} \text{ me te } \frac{4}{9}$ $\text{te } \frac{8}{9} \text{ me te } \frac{9}{10}$ $\text{te } \frac{3}{4} \text{ me te } \frac{7}{11}$	<p><i>TPT, Pukapuka 7:</i></p> <ul style="list-style-type: none"> Hautau Waenganui (wh.115)
<p>Ka whakaoti rapanga e whai wāhi mai ana te whakamahinga o te hautau hei ine i tētahi atu hautau. Hei tauira:</p> $\frac{3}{4} \div \frac{2}{3} = \frac{9}{12} \div \frac{8}{12} = 1\frac{1}{8}$	$\frac{7}{8} \div \frac{1}{4} = \frac{7}{8} \div \frac{2}{8} = \frac{7}{2} = 3\frac{1}{2}$ $\frac{4}{5} \div \frac{1}{2} = \frac{8}{10} \div \frac{5}{10} = \frac{8}{5} = 1\frac{3}{5}$ $\frac{9}{10} \div \frac{3}{4} = \frac{18}{20} \div \frac{15}{20} = \frac{18}{15} = 1\frac{1}{5}$ $\frac{7}{8} \div \frac{2}{3} = \frac{21}{24} \div \frac{16}{24} = \frac{21}{16} = 1\frac{5}{16}$ $\frac{1}{4} \div \frac{2}{5} = \frac{5}{20} \div \frac{8}{20} = \frac{5}{8}$ $\frac{3}{10} \div \frac{3}{4} = \frac{6}{20} \div \frac{15}{20} = \frac{6}{15} = \frac{2}{5}$	<p><i>TPT, Pukapuka 7:</i></p> <ul style="list-style-type: none"> Whakawehenga Hautau (wh.117)
<p>Ka whakaoti rapanga e whai wāhi mai ana te whakapiki ūrau, te whakaheke ūrau rānei. Hei tauira:</p> <p>Ka whakapikia te wāriu o te whare mai i te \$240,000 ki te \$270,000, arā, e \$30,000 te whakapikinga. Ko te $\frac{30,000}{240,000}$ te hautaunga whakapiki $= \frac{1}{8} = 12.5\%$</p>	<p>E \$69 te utu i muri i te tāpiritanga o te 15% tāke hokohoko (GST), nō reira, ko te \$60 te utu ake (kāore he tāpiritanga GST). Arā, $69 \div 1.15 = 60$. \$92 → \$80 (karekau he GST) \$138 → \$120 (karekau he GST) \$230 → \$200 (karekau he GST)</p> <p>Te whakapikinga wāriu whare: \$125,000 → \$150,000 = 20% te whakapikinga \$96,000 → \$168,000 = 75% te whakapikinga</p>	<p><i>TPT, Pukapuka 8:</i></p> <ul style="list-style-type: none"> Tātaitanga ūrau (wh.73) Te Whakatau Tata i te ūrau (wh.74)

	<p>$\\$495,000 \rightarrow 495,000 = 0\% \text{ te whakapikinga}$</p> <p>$\\$333,000 \rightarrow 444,000 = 33\% \text{ te whakapikinga}$</p> <p>$\\$256,000 \rightarrow 332,000 = 29.7\% \text{ te whakapikinga}$</p>	
<p>Ka whakatau tata, ka whakaoti i ngā rapanga ūrau, e whai wāhi mai ana te tauoti, te tau ā-ira rānei. Hei tauira: E 35 o ngā tītere 56 a Hinewai i ū. E hia te ūrau o ana tītere i ū?</p>	<p>25% o te 64 = 16</p> <p>80% o te 45 = 36</p> <p>35% o te 24 = 8.4</p> <p>65% o te 36 = 23.4</p> <p>58% o te 82 ≈ 60% o te 80 = 48 (ko te 47.56 te otinga tōtika)</p> <p>77% o te 38 ≈ 75% o te 40 = 30 (ko te 29.26 te otinga tōtika)</p> <p>32 o roto i te 48 ≈ 32 o roto i te 50 = 64% (ko te 66.6% te ūrau tōtika)</p> <p>32 o roto i te 39 ≈ 32 o roto i te 40 = 80% (ko te 82% te ūrau tōtika)</p> <p>22 o roto i te 29 ≈ 22 o roto i te 30 = $3\frac{1}{3} \times 22 = 77\%$ (ko te 75.8% te ūrau tōtika)</p>	<p><i>TPT, Pukapuka 8:</i></p> <ul style="list-style-type: none"> • He Rautaki Matarua hei Whakaoti Rapanga Ūrau (wh.76) • He Rautaki Matatahi hei Whakaoti Rapanga Ūrau (wh.78) • He Rapanga Ūrau Kōaro (wh.113) <p><i>He Tau Anō Te Tau: Te Tau, Pukapuka Tuarua, Taumata 3-4:</i></p> <ul style="list-style-type: none"> • Te Hoki mā Runga Waka Rererangi (wh.2)
<p>Ka whakamahi tauwehe toitū, hei matapae mēnā he toenga hautau noa, he toenga hautau tāruarua rānei ka hua mai i tētahi whakawehenga.</p>	<p>Whiriwhiria ngā tauwehe toitū o ēnei: 20, 16, 25, 28, 15, 40, 18, 36, 70</p> <p>Whiriwhiria mēnā he toenga hautau noa, he toenga hautau tāruarua rānei ka hua mai i ēnei whakawehenga:</p> <p>$1 \div 16 = \square$</p> <p>$1 \div 25 = \square$</p> <p>$1 \div 28 = \square$</p> <p>$1 \div 15 = \square$</p> <p>$1 \div 40 = \square$</p> <p>$1 \div 18 = \square$</p> <p>$1 \div 36 = \square$</p> <p>$1 \div 70 = \square$</p> <p>He aha i hua mai ai he toenga hautau noa, he toenga hautau tāruarua rānei i ēnei whakawehenga?</p> <p>$\frac{3}{15} = 0.2$</p> <p>$\frac{5}{15} = 0.3\dot{3}$</p> <p>$\frac{9}{18} = 0.5$</p> <p>$\frac{2}{18} = 0.1\dot{1}$</p>	

<p>Ka whakaoti rapanga e whai wāhi mai ana te pāpātanga kōaro. Hei tauira: E 9 ngā rangi ka oti i ngā tāngata tokowhā tētahi whare te peita. E hia ngā rangi ka oti taua whare te peita i ngā tāngata tokotoru?</p> <p>$4 \times 9 = 36$ ngā rangi mō te tangata kotahi. $36 \div 3 = 12$ ngā rangi mō ngā tāngata tokotoru.</p>	<p>Te hanga whare:</p> <p>E 2 ngā rangi, ka oti i ngā tāngata tokorima. E hia ngā rangi ka oti i te tokorua?</p> <p>E 5 ngā rangi.</p> <p>E 7 ngā rangi, ka oti i ngā tāngata tokowhā. E hia ngā rangi ka oti i ngā tāngata 14?</p> <p>E 2 ngā rangi.</p> <p>E 2 ngā rangi, ka oti i ngā tāngata tokorima. E hia ngā rangi ka oti i te tokorua?</p> <p>E 5 ngā rangi.</p> <p>E 6 ngā rangi, ka oti i ngā tāngata tokoono. E hia ngā rangi ka oti i te tokowaru?</p> <p>E 4.5 ngā rangi.</p> <p>E 4 ngā rangi, e 3 ngā heihei, e 6 ngā hēki ka puta mai. E hia rangi kia puta ngā hēki 10, mēnā e 5 ngā heihei?</p> <p>E 4 ngā rangi.</p> <p>E 7 ngā rā hei whakatū mā ētahi kaimahi tokowaru i tētahi whare. Nō reira, e hia ngā rā hei whakatū i ngā whare e 3, mēnā tokoono ngā kaimahi?</p> <p>E 28 ngā rangi.</p>	<p><i>TPT Pukapuka 8:</i></p> <ul style="list-style-type: none"> • Te Whakatairite Pāpātanga (wh.111)
<p>Ka whakaoti rapanga pākoki. Hei tauira:</p> <p>He aha te koki rewā o te waka rererangi, mēnā e 679m tōna teitei, ā, e 2,604 te tawhiti o tana haere i muri i te rerenga atu?</p>		<p><i>TPT Pukapuka 7:</i></p> <ul style="list-style-type: none"> • Ōwehenga Pākoki (wh.129)



Te Kuputaka



Māori → Ingarihi

anga pirepire	horizontal abacus
anga tekau	tens frame
aromatawai ~a	assessment
arotake ~a	evaluate
ekenga panuku	progress
ekenga taumata	achievement
hautau waetahi	unit fraction
hautau waetahi-kore	non-unit fraction
horahanga	area
hōtaka whakaako	teaching programme
huatau	concept
kaupae	stage
kiritau	self esteem
kōnae	file
kōwae ako	unit (of teaching)
mahere tiro roa	long term plan
mātāpono	principle
mātauranga ngaiotanga	professional knowledge
mātauranga tau	number knowledge
ngohe	activity
pae ipurangi	web site
paheko tau	number operation
papatohu pāngarau	pāngarau board
paremata	compensation
rapanga pakitau	number problem story
rārangī tau	number line
raupapa ~hia	sequence, order
rautaki tau	number strategy
tātari mōhiotanga	analyse knowledge
tau māmā	tidy number
tauraro	denominator
taurite	balance
taurunga	numerator
tūhuratanga	investigation
uara tū	place value
waihangā mōhiotanga	creating knowledge

wāwāhi tau	partition number
wehe kē	independent
whakaahua ā-hinengaro	mental image
whakaharatau	practice
whakamahi mōhiotanga	apply knowledge
whakaputa maharatanga	recall knowledge
whakaputa mōhiotanga	understand knowledge
whakaū	consolidate

Ingarihi → Māori

achievement	ekenga taumata
activity	ngohe
analyse knowledge	tātari mōhiotanga
apply knowledge	whakamahi mōhiotanga
area	horahanga
assessment	aromatawai ~a
balance	taurite
concept	huatau
consolidate	whakaū
compensation	paremata
creating knowledge	waihanga mōhiotanga
denominator	tauraro
evaluate	arotake ~a
file	kōnae
horizontal abacus	anga pirepire
independent	wehe kē
investigation	tūhuratanga
long term plan	mahere tiro roa
mental image	whakaahua ā-hinengaro
non-unit fraction	hautau waetahi-kore
number knowledge	mātauranga tau
number line	rārangī tau
number operation	paheko tau
number problem story	rapanga pakitau
number strategy	rautaki tau
numerator	taurunga
order, sequence	raupapa ~hia
pāngarau board	papatohu pāngarau
partition number	wāwāhi tau
place value	uara tū
practice	whakaharatau
principle	mātāpono
professional knowledge	mātauranga ngaiotanga
progress	ekenga panuku
recall knowledge	whakaputa maharatanga

self esteem	kiritau
sequence, order	raupapa ~hia
stage	kaupae
teaching programme	hōtaka whakaako
tens frame	anga tekau
tidy number	tau māmā
understand knowledge	whakaputa mōhiotanga
unit fraction	hautau waetahi
unit (of teaching)	kōwae ako
web site	pae ipurangi

