



Te Poutama Tau

Pukapuka Tuawaru

Te Aroā Tikanga Tau me te Whakaaro Taurangi



TE TĀHUHU O TE MĀTAURANGA
Ministry of Education

Te Poutama Tau

Pukapuka Tuawaru

Te Aroā Tikanga Tau me te Whakaaro Taurangi

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Ngā Ihirangi

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Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

Te Whakaako i te Aroā Tikanga Tau me te Whakaaro Taurangi

Koia nei te pukapuka tuawaru o te huinga pukapuka o Te Poutama Tau, e aro ana ki ngā kaupae teitei o te mahere tau, kia mārama tonu ngā ākongā ki ngā tikanga o te pūnaha tau, kia whakawhānui anō hoki i taua māramatanga ki te mātauranga taurangi.

Ko te taurangi tētahi wāhanga matua o te pāngarau. Ko tā te taurangi, he whakawhānui i ngā paheko me ngā tikanga tau mā te whakamahi pū (reta). He pono ngā kīanga taurangi i ngā wā katoa, ahakoa ngā tau ka whakaurua ki te kīanga.

Hei tauira: He pono te whārite $4 \div 4 = 1$, engari kāore e pono ana te whārite $a \div e = 1$ i ngā wā katoa. E pono ai te whārite $a \div e = 1$, me ōrite te a me te e (arā $a = e$).

Hei tauira anō: He pono te whārite $a \times e = e \times a$ i ngā wā katoa, ahakoa ngā tau ka whakaurua mō te a me te e .

Ko te tūāpapa o te taurangi, ko te mātauranga tau. Nō reira e tika ana kia pakari tonu te mātauranga tau o ngā ākongā, e angitu ai rātou i te mahi taurangi. E ai ki ngā rangahau o te ao whakaako pāngarau, me āta poi poi ngā ākongā i ngā kōeke katoa o te kura ki te tūhura, ki te whakaahua, ki te whakawhānui i ngā pānga maha o roto i te pūnaha tau. Me whakahāngai hoki te mātauranga tau ki ērā atu whenu o te pāngarau. Hei tauira, ko te tūhura i te pānga o te paenga me te horahanga o tētahi tapawhā hāngai, ko te hononga rānei o ngā momo waeine o te pūnaha ngahuru.

Me āta whiriwhiri ngā ngohe ako kia hāngai tonu ki te mātauranga o ngā ākongā, kia taea e rātou te whakaputa whakaaro ki a rātou anō, otirā ki te pouako hoki, kia mauri tau hoki rātou ki tō rātou taiao ako. Ko te arataki i ngā ākongā kia mārama

tonu te āhua o tā rātou tuhituhi i ngā rautaki paheko tētahi āhuatanga hei āwhina i a rātou ki te whakaputa i ō rātou whakaaro, ki te whakawhānui hoki i aua whakaaro.

I roto i tēnei pukapuka, ko ngā paheko tau te waka hei kawē i te mātauranga taurangi. Kāore e tino whakamahia ngā tohu taurangi, engari mā te pouako anō tēnei āhuatanga e tūhono atu ki ngā whakamārama ā-kupu a ngā ākongā mēnā ka whaihua.

Te Wāhanga 1

Te Whakaako i te Aroā Tikanga Tau me te Whakaaro Taurangi

He Whakamārama

Ko tā ngā ngohe i tēnei pukapuka, he whakawhanake i ngā rautaki tau ā-hinengaro a ngā ākongā i tēnā kaupae, i tēnā kaupae o Te Mahere Tau (tirohia te Pukapuka Tuatahi). Ka whāia te tauira mō te whakaako rautaki i āta whakamāramatia i roto i te Pukapuka Tuatoru. Arā, ko ngā hikoitanga e toru nei:

- te whakamahi rauemi
- te whakaahua ā-hinengaro
- te whakamahi tikanga tau.

Kua tuhia he whāinga ako mō ia ngohe, arā, te rerenga kōrero e tīmata pēnei ana: “E ako ana ahau ki te ...”. E tino hono ana ēnei whāinga ako ki ngā whāinga rautaki i āta whakaaturia i te Pukapuka Tuatoru.

Koia nei te tohu e whakamahia ana i roto i ngā pukapuka katoa o Te Poutama Tau, hei whakaatu i te kaupae o te mahere tau e hāngai ana ki tēnā, ki tēnā o ngā ngohe.

0	→	Te Tatau Pitomata
1–3	→	Te Rautaki Tatau (Te Tatau Pānga Tahī, Te Tatau Taonga mai i te Kotahi, Te Tatau ā-Hinengaro mai i te Kotahi)
4	→	Te Puanga o te Tatau
5	→	Te Pihinga o te Wāwāhi Tau Tāpiripiri
6	→	Te Puanga o te Wāwāhi Tau Tāpiripiri
7	→	Te Wāwāhi Tau Whakarea
8	→	Te Wāwāhi Tau Pānga Riterite

He Aha te Aroā Tikanga Tau?

Mēnā e pakari ana te aroā tikanga tau o te ākongā, he mōhio ia ki te whaitake, te tika rānei o te otinga o tētahi paheko tau.

Hei tauira: Ka hokona e Raiha tētahi pūrere whakatangi kōpae \$141 te utu. E 9.9% te whakahekenga. Ka whakaaro a Raiha he pātata te 9.9% ki te 10%. He māmā te whiriwhiri i te 10% o te \$141 – ko te \$14.10. Ka tangohia te \$14 i te \$141, ka \$127.

Ko tā te kaihoko, he whakamahi i te tātaitai, me te kī atu ki a Raiha ko te \$133.98 te utu. Ka mōhio a Raiha kāore e tika ana, nō reira ka tono ia ki te kaihoko kia āta tātaihia anō. (Ko te mahi hē a te kaihoko, he whakauru i te $\frac{9.9}{141} \times 100$ ki tana tātaitai, kāore te $\frac{9.9}{100} \times 141$.)

Te Aromatawai

Kei te mutunga o ia ngohe tētahi pātai aromatawai. He pātai tēnei hei aromatawai mā te pouako i te mārama o te ākongā ki te tikanga tau o roto i te ngohe, arā, mēnā kua mau i te ākongā te whāinga ako, kāore anō rānei.

Ngā Ngohe mai i ērā atu o ngā Pukapuka o Te Poutama Tau

Kei roto i ēnei pukapuka o Te Poutama Tau ētahi atu ngohe e hāngai ana ki te aroā tikanga tau me te whakaaro taurangi.

- *Pukapuka Tuarima: Te Whakaako i te Tāpiritanga me te Tangohanga*
- *Pukapuka Tuaono: Te Whakaako i te Whakareatanga me te Wehenga*
- *Pukapuka Tuawhitu: Te Whakaako i te Hautau, te Tau ā-Ira, me te Ōrau*

Kua tuhia ngā pukapuka, ngā whārangi me ngā whāinga ako i te tīmatanga o ia wāhanga o tēnei pukapuka.

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

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Te Wāhanga 2

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Te Kaupae 4: Te Puanga o te Tatau

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Ngā Ngohe i Pukapuka Kē

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Te Ngohe	Te Pukapuka	Te Whāinga Ako
Ngā Kāri Tau Number Tiles	Pukapuka Tuarima Whārangī 50–52	Kei te ako au ki te tāpiri mā te tatau ake, mēnā ko te tau nui te tau tuatahi o te whārite.
Te Ngaku Tau The Number Strip	Pukapuka Tuarima Whārangī 53–55	Kei te ako au ki te tāpiri mā te tatau ake, mēnā ko te tau nui te tau tuatahi o te whārite.
Te Hākari o Ngā Pea The Bears Picnic	Pukapuka Tuarima Whārangī 55–56	Kei te ako au ki te tāpiri mā te tatau ake, mēnā ko te tau nui te tau tuatahi o te whārite.
Ngā Pepeke Poraka Frog Jumps	Pukapuka Tuarima Whārangī 57–58	Kei te ako au ki te tāpiri mā te tatau ake, mēnā ko te tau nui te tau tuatahi o te whārite.
Te Tau Nui Ake i te Tuatahi The Bigger Number First	Pukapuka Tuarima Whārangī 59–60	Kei te ako au ki te tāpiri mā te tatau ake i te tau nui ahakoa ka homai te tau iti iho i te tuatahi.
Kāore e Mōhio ki te Rerekētanga Change Unknown	Pukapuka Tuarima Whārangī 60–62	Kei te ako ki te whakaoti tāpiritanga mēnā kei te ngaro tētahi o ngā tau tāpiri. Hei tauira: $4 + \square = 7$
Te Tatau Whakamuri Counting Back	Pukapuka Tuarima Whārangī 62–63	Kei te ako au ki te tatau whakamuri hei whakaoti rapanga tangohanga.
Te Tāpiri Tekau Adding Tens	Pukapuka Tuarima Whārangī 64–65	Kei te ako au ki te tāpiri tekau mā te tatau mawhiti-tekau, mā te whakarōpū rānei i ngā tekau.
Te Tango i ngā Tekau Subtracting Tens	Pukapuka Tuarima Whārangī 66–67	Kei te ako au ki te tango tekau mā te tatau whakamuri mawhiti-tekau, mā te tango rānei i ngā rōpū tekau.
Te Tāpiri i ngā Tahī me ngā Tekau Adding Ones and Tens	Pukapuka Tuarima Whārangī 67–68	Kei te ako au ki te tāpiri tau mati-rua, he iti ake i te 10 te tapeke o ngā mati tahī.
Te Tango i ngā Tahī me ngā Tekau Subtracting Ones and Tens	Pukapuka Tuarima Whārangī 69	Kei te ako au ki te tango tau matirua, kāore e whai wāhi mai ana te wāwāhitanga tau.
Ngā Tahī me ngā Tekau kei te Ngaro The Missing Ones and Tens	Pukapuka Tuarima Whārangī 70–71	Kei te ako au ki te whakaoti rapanga pēnei i te $45 + \square = 67$, kāore e whai wāhi mai ana te wāwāhitanga tau.
Te Pukapuka Mano The Thousands Book	Pukapuka Tuarima Whārangī 71–72	Kei te ako au ki te tāpiri, ki te tango hoki i ngā tahī me ngā tekau, mā te neke whakatemauī, whakatematau, whakaterunga, whakateraro i ngā tūtohi o te pukapuka mano.
Whakamahia kia Tekau Make Ten	Pukapuka Tuarima Whārangī 73–75	Kei te ako au ki te tāpiri i ētahi tau e toru nui ake rānei, mā te whakarōpū i ngā tau ka tapeke ki te 10.

Te Aroā Tikanga Tau me te Whakaaro Taurangi

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Te Ngohe	Te Pukapuka	Te Whāinga Ako
Ngā Tau Taurite Compatible Numbers	Pukapuka Tuarima Whārangī 75–76	Kei te ako au ki te whakamahi tau taurite ki te whakaoti rapanga pēnei i te $5 + 3 + 6 - 8 = \square$. Arā ka tāpirihia te rima me te toru kia hua ko te waru kātahi ka tangohia te waru, ko te 6 anake e toe mai ana. (Ka kīia he tau taurite te $5 + 3$ me te 8.)
Te Tango i ngā Wāhanga Subtraction in Parts	Pukapuka Tuarima Whārangī 77–79	Kei te ako au ki te wāwāhi tau hei whakaoti tangohanga.
Kei Runga ake i ngā Tekau Up Over the Tens	Pukapuka Tuarima Whārangī 79–81	Kei te ako au ki te wāwāhi tau hei whakaoti tāpiritanga.
Ngā Ngaku Tau Number Strips	Pukapuka Tuaono Whārangī 5–7	Kei te ako au ki te whakaoti rapanga whakarea mā te tatau ā-rōpū i tētahi huinga taonga.
Te Wehe Ōrite Fair Shares	Pukapuka Tuawhitu Whārangī 5–8	Kei te ako au ki te kimi mai i ngā haurua, i ngā hauwhā, i ētahi atu hautau o tētahi huinga, o tētahi āhua rānei.

Ngā Ngohe Hou

Karekau he ngohe hou mō te kaupae 4 – Te Puanga o te Tatau.

Te Aroā Tikanga Tau me te Whakaaro Taurangi

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Te Wāhanga 3

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Te Kaupae 5: Te Pihinga o te Wāwāhi Tau Tāpiripiri

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Ngā Ngohe i Pukapuka Kē

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Te Ngohe	Te Pukapuka	Te Whāinga Ako
Ngā Whakaritenga Comparisons	Pukapuka Tuarima Whārangi 84–86	Kei te ako au ki te tāpiri, ki te tango hoki, mā te whakatairite huinga, kāore mā te tatau.
Ngā Whakaritenga Anō More Comparisons	Pukapuka Tuarima Whārangi 86–88	Kei te ako au ki te tāpiri, ki te tango hoki, mā te whakatairite huinga, kāore mā te tatau.
E Hia Ngā Tekau Tāra? How Many Ten Dollar Notes	Pukapuka Tuarima Whārangi 88–91	Kei te ako au ki te whiriwhiri i te maha o ngā tekau kei roto i tētahi tau he iti iho i te 1 000.
Ngā Ngaku Kararehe Animal Arrays	Pukapuka Tuaono Whārangi 9–11	Kei te ako au ki te whakaoti rapanga whakarea mā te whakamahi tūtohi tukutuku.
Ngā Ope Kaiā Moana Pirate Crews	Pukapuka Tuaono Whārangi 11–13	Kei te ako au ki te whakaoti rapanga mā te tohatoha ōrite.
Ngā Pouaka Pihikete Biscuit Boxes	Pukapuka Tuaono Whārangi 13–15	Kei te ako au ki te whakaoti rapanga wehe, mā te whiriwhiri i te maha o ngā rōpū ōrite.
Ngā Rua, ngā Rima, me ngā Tekau Twos, Fives, and Tens	Pukapuka Tuaono Whārangi 16–18	Kei te ako au ki te whakamahi i taku mōhiotanga ki ngā tikanga o te rua, o te rima, o te tekau ki te whiriwhiri meka whakareatanga.
He Pihikete Wafers	Pukapuka Tuawhitu Whārangi 10–13	Kei te ako au ki te kimi mai i te hautanga o tētahi roa, me te hautau nui ake i te kotahi.
He Kararehe Animals	Pukapuka Tuawhitu Whārangi 13–15	Kei te ako au ki te kimi mai i te hautau o tētahi huinga.
Ngā Porohita Hautau Fraction Circles	Pukapuka Tuawhitu Whārangi 15–20	Kei te ako au ki te raupapa hautau mai i te iti ki te rahi.
Ngā Manu Hiakai Hungry Birds	Pukapuka Tuawhitu Whārangi 20–22	Kei te ako au ki te whiriwhiri i te hautau o tētahi huinga mā te tāpiritanga me te tangohanga.

Ngā Ngohe Hou

Tau Pūmau

E ako ana ahau i te tikanga nei:

Mēnā ka tangohia tētahi rahinga i tētahi tau, kātahi ka tāpiri anō i taua rahinga, ka noho pūmau tonu te tau tīmatanga.

Rauemi

He rauemi uara tū (ngā tekau me ngā tahi), he porotiti.

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Te Whakamahi Rauemi

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Whakaaturia te rapanga nei ki ngā ākonga, ka pānui ai.</p> <p>Tuhia te whārite ki te papa tuhituhi.</p>	<p>Anei te rapanga hei tiro tiro mā tātou.</p> <p>\$45 tā Hinewai. Ka pau i a ia te \$4 ki te hoko kai. Nā tōna kuia i hoatu te \$4. E hia āna moni i nāianei?</p> <p>Me pēhea te tuhi hei whārite? $(45 - 4 + 4)$</p> <p>Whakatauiratia te rapanga ki ngā rauemi. E hia tāra tā Hinewai i te tīmatanga? $(E 45.)$</p> <p>Whakaaturia te 45 ki ngā rauemi. Tangohia te 4. Tāpirihia te 4. He aha te otinga? (45)</p> <p>Tuhia te otinga ki te papa tuhituhi.</p>
<p>Kia pērā anō te mahi mō ēnei rapanga:</p> <p>43 ngā pipi i kohia e Maruera. E 5 atu anō ka hoatu e tana hoa. E 5 ka whakahokia ki a Tangaroa. E hia katoa ana pipi i nāianei?</p> <p>$43 + 5 - 5$</p> <p>26 ngā āporo i katohia e Tamanui. E 6 ka kainga e ōna hoa. E 6 atu anō ka katohia e ia. E hia katoa ngā āporo i nāianei?</p> <p>$26 - 6 + 6$</p> <p>52 rita kōhinu kei roto i te motokā o Raiha. Ka pau i a ia te 3 rita, kātahi ia ka whakaurua te 3 rita atu anō. E hia te rōrahi kōhinu kei roto i tōna motokā i nāianei?</p> <p>$52 - 3 + 3$</p> <p>14 ngā rare a Haimona, nā tōna koroua i hoatu e 8. 14 ka pau i a Haimona rātou ko ōna hoa te kai. E hia katoa ana rare i nāianei?</p> <p>$14 + 8 - 14$</p> <p>34 ngā manu e noho ana ki runga rākau. E 3 anō ngā manu ka tau atu ki reira. 34 ka rere atu. E hia katoa ngā manu i nāianei?</p> <p>$34 + 3 - 34$</p>	

Te Aroā Tikanga Tau me te Whakaaro Taurangi

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Te Whakaahua ā-Hinengaro

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Whakaaturia te rapanga nei ki ngā ākonga, ka pānui ai.</p> <p>Tuhia te whārite ki te papa tuhituhi.</p> <p>Ka mahi huna te pouako i ngā rauemi.</p> <p>Whakaaturia te 6 porotiti hei tohu i te \$6 ka pau i a Hinewai.</p> <p>Whakaaturia hoki te 6 porotiti hei tohu i te \$6 ka hoatu e tōna kuia.</p>	<p>Anei te rapanga hei tiroiro mā tātou.</p> <p>\$56 tā Hinewai. Ka pau i a ia te \$6 ki te hoko kai. Nā tōna kuia i hoatu te \$6. E hia āna moni i nāianei?</p> <p>Me pēhea te tuhi hei whārite? $(56 - 6 + 6)$</p> <p>E hia tāra tā Hinewai i te tīmatanga? $(56.)$</p> <p>Nō reira, 56 aku porotiti hei tohu i āna tāra. Anei te 6 tāra ka pau i a ia. E hia e toe mai ana? $(50.)$</p> <p>Anei te \$6 nā tōna kuia i hoatu. E hia ana tāra i nāianei?</p> <p>Tuhia te otinga ki te papa tuhituhi.</p>
<p>Kia pērā anō te mahi mō ēnei rapanga.</p> <p>25 ngā pipi i kohia e Maruera. E 4 atu anō ka hoatu e tōna hoa. E 4 ka whakahokia ki a Tangaroa. E hia katoa ana pipi i nāianei?</p> <p>$25 + 4 - 4$</p> <p>58 ngā āporo i katohia e Tamanui. E 7 ka kainga e ōna hoa. E 7 atu anō ka katohia e ia. E hia katoa ngā āporo i nāianei?</p> <p>$58 - 7 + 7$</p> <p>28 rita kōhinu kei roto i te motokā o Raiha. Ka whakaurua te 15 rita, ka pau te 28 rita i tana haerenga. E hia te rōrahi kōhinu kei roto i tōna motokā i nāianei?</p> <p>$28 + 15 - 28$</p> <p>23 ngā rare a Haimona, nā tōna koroua i hoatu e 9. E 9 ka pau i a Haimona rātou ko ōna hoa te kai. E hia katoa ana rare i nāianei?</p> <p>$23 + 9 - 9$</p>	

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Te Whakamahi Tikanga Tau

Hoatu ētahi rapanga pēnei i ēnei hei whakaū i tēnei tikanga.

\$345 kei roto i te pūtea pēke a Waiora. Ka whakaurua te \$907, kātahi ka tangohia te \$907. E hia tāra kei roto i te pūtea pēke i nāianei?

$$345 + 907 - 970$$

He kohikohi kāri te mahi a Hēnare. 234 āna kāri, nā tōna hoa i hoatu te 69, kātahi ka ngaro i a ia ngā kāri 234. E hia āna kāri i nāianei?

$$234 + 69 - 234$$

689 ngā kau a Kaipāmu Rongopai. 341 ka hokona atu, 341 ka hokona mai. E hia ana kau i nāianei?

$$689 - 341 + 341$$

368 ngā manuhiri i tae mai ki te hui i te rā tuatahi. 89 i tae mai i te rā tuarua, 368 i wehe atu.

Tokohia ngā manuhiri i nāianei?

$$368 + 89 - 368$$

He Pātai Aromatawai:

Titiro ki tēnei whārite: $500 - \square + \square$.

Mēnā he ōrite te tau ka tuhia atu ki ngā pouaka e rua, he aha te otinga? (Ko te 500 te otinga, ahakoa he aha te tau ka tuhia ki ngā pouaka.)

Te Aroā Tikanga Tau me te Whakaaro Taurangi

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Ngā Hautanga i Roto i te Tahi

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E ako ana ahau i ngā tāpiritanga hautau ka eke ki te kotahi.

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Rauemi

He mataono honohono.

Te Whakamahi Rauemi

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Tuhia te rapanga ki te papa tuhituhi, ka pānui ai.</p> <p>Whakatauiratia te rapanga ki ngā mataono honohono.</p> <p>Whakawhitiwhiti kōrero mō te tāpiri i ngā hautau.</p> <p>Tuhia te tāpiritanga ki te papa tuhituhi.</p>	<p>Anei te rapanga hei tiroiro mā tātou.</p> <p>E hanga ana a Mākere i tētahi pāketete rare. E 4 ngā rare kōwhai, e 3 ngā rare whero i te pāketete kotahi.</p> <p>Whakamahia ngā mataono honohono hei hanga i te pāketete rare.</p>  <p>He aha te hautau o ngā rare kōwhai? (Ko te whā hauwhitu [$\frac{4}{7}$]. He kōwhai te tae o ngā rare e whā o roto i ngā rare katoa e whitu.)</p> <p>He aha te hautau o ngā rare whero? (Ko te toru hauwhitu [$\frac{3}{7}$].) E whitu katoa ngā rare, e toru o roto i te whitu he whero.)</p> <p>Tāpirihia ngā hautau e rua nei, te whā hauwhitu me te toru hauwhitu. He aha te otinga? (Ko te whitu hauwhitu, ko te kotahi rānei.)</p> <p>E hia ngā hauwhitu i roto i te kotahi? (E 7, $\frac{4}{7} + \frac{3}{7} = \frac{7}{7} = 1$.)</p>
<p>Kia pērā anō ngā mahi me te whakawhitiwhiti kōrero mō ētahi atu whārite. Hei tauira:</p> <p>$\frac{4}{6} + \frac{2}{6}$ $\frac{7}{10} + \frac{3}{10}$ $\frac{8}{11} + \frac{3}{11}$</p>	

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Te Whakaahua ā-Hinengaro

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Kōrerohia te rapanga. Whakaaturia ngā mataono kōwhai e 5.</p>	<p>He kōwhai, he whero ngā rare kei roto i tētahi pākete. Anei ngā rare kōwhai. E rima hauwaru ($\frac{5}{8}$) o ngā rare he kōwhai.</p> <p>E hia katoa ngā rare? (E 8.)</p> <p>E hia ngā rare whero? (E 3.)</p> <p>He aha te hautanga o ngā rare whero? (Toru hauwaru [$\frac{3}{8}$].)</p> <p>Tuhia te tāpiritanga o ngā hautau. ($\frac{5}{8} + \frac{3}{8} = 1$)</p> <p>E hia katoa ngā hauwaru i roto i te tahi? (E 8: $\frac{8}{8} = 1$)</p>
<p>Hei mahi atu anō:</p> <p>$\frac{6}{11} + \square = 1$ $\frac{1}{5} + \square = 1$ $\square + \frac{8}{13} = 1$</p>	

Te Whakamahi Tikanga Tau

Hoatu ētahi anō rapanga hei whakaū i tēnei tikanga.

Hei tauira:

Kua oti i a Kimiora te $\frac{5}{31}$ o tana pukapuka te pānui. He aha te hautanga e toe mai ana hei pānui māna?

$$\left(\frac{5}{31} + \square = 1 \quad \frac{5}{31} + \frac{26}{31} = \frac{31}{31}\right)$$

E pai ana kia tukuna mā ngā ākongā e whakaaro tētahi paki e hāngai ana ki ēnei whārite hautau:

$$\frac{6}{17} + \square = 1 \quad \frac{27}{47} + \square = 1 \quad \square + \frac{57}{100} = 1$$

$$1 - \frac{12}{23} = \frac{\square}{23} \quad 1 - \frac{90}{100} = \frac{\square}{100} \quad 1 - \frac{13}{15} = \square$$

$$1 - \frac{14}{39} = \square$$

He Pātai Aromatawai

Tuhia ētahi hautau e rua, ko te 1 000 te tauraro o ēnei hautau. Mēnā ka tāpirihia ēnei hautau, ka eke ki te 1.

Hei tauira whakautu:

$$\frac{27}{1000} + \frac{973}{1000} = 1$$

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

EA

Te Wāhanga 4

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Te Kaupae 6: Te Puanga o te Wāwāhi Tau Tāpiripiri

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Ngā Ngohe i Pukapuka Kē

AP

Te Ngohe	Te Pukapuka	Te Whāinga Ako
Te Tiakina i ngā Rau Saving Hundreds	Pukapuka Tuarima Whārangi 92–94	Kei te ako au ki te whakaoti rapanga pēnei i te $567 + \square = 800$ mā te whakamahi i taku mōhiotanga ki ngā tikanga uara tū. Arā, 10 ngā tahi = 10, 10 ngā tekau = 100.
Te Pekepeke i te Rārangi Tau Jumping the Number Line	Pukapuka Tuarima Whārangi 94–96	Kei te ako au ki te mawhiti mā tētahi tau māmā i te rārangi tau ki te whakaoti rapanga pēnei i te $17 + \square = 91$.
Kaua e Tango, me Tāpiri Kē! Don't Subtract – Add!	Pukapuka Tuarima Whārangi 96–98	Kei te ako au ki te huri i ngā tangohanga pēnei i te $51 - 34 = \square$ hei tāpiritanga: $34 + \square = 51$.
Ngā Rapanga Pēnei i te $23 + \square = 71$ Problems Like $23 + \square = 71$	Pukapuka Tuarima Whārangi 99–100	Kei te ako au ki te mawhiti i tētahi tau māmā i te rārangi tau kātahi ka hoki whakamuri ki te whakaoti rapanga pēnei i te $13 + \square = 91$.
E Hia ngā Tekau me ngā Rau? How Many Tens and Hundreds?	Pukapuka Tuarima Whārangi 100–102	Kei te ako au ki te whiriwhiri i te maha o ngā rau kei roto i tētahi tau he nui ake i te 1 000.
He Rapanga Pēnei i te $37 + \square = 79$ Problems Like $37 + \square = 79$	Pukapuka Tuarima Whārangi 102–104	Kei te ako au ki te tāpiri wehewehe i ngā tekau me ngā tahi mēnā e hāngai ana.
He Rapanga Pēnei i te $\square + 29 = 81$ Problems Like $\square + 29 = 81$	Pukapuka Tuarima Whārangi 104–105	Kei te ako au ki te huri kōaro i ngā tāpiritanga pēnei i te $\square + 29 = 81$ ki te $29 + \square = 91$, me te whakamahi i tētahi rautaki ā-hinengaro e hāngai ana ki te whakaoti i te rapanga.
Kia Noho Tata atu Tētahi Tau ki te Rau When One Number is Near a Hundred	Pukapuka Tuarima Whārangi 105–107	Kei te ako au i te tikanga paremata hei whakaoti rapanga tāpiri mēnā e pātata ana tētahi o ngā tau tāpiri ki te rau.
He Rapanga Pēnei i te $73 - 19 = \square$ Problems Like $73 - 19 = \square$	Pukapuka Tuarima Whārangi 107–109	Kei te ako au ki te whakaoti rapanga pēnei i te $73 - 19 = \square$ mā te tango i tētahi tau māmā, ka paremata ai.
Ngā Tāpiritanga Ōrite Equal Additions	Pukapuka Tuarima Whārangi 109–110	Kei te ako au ki te whakaoti tangohanga mā te rautaki “tāpiritanga ōrite”, kia māmā ai te tau tango.
Te Pakeke o ngā Tāngata Peoples Ages	Pukapuka Tuarima Whārangi 111–112	Kei te ako au ki te whakamahi ā-hinengaro i te rautaki “kawea ki te tau māmā” hei whakaoti tangohanga.
He Mahi Whārite Balancing Act	Pukapuka Tuarima Whārangi 112–115	Kei te ako au he ōrite te otinga i te taha mauī o te tohu ōrite ki te otinga i te taha matau.

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

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Te Ngohe	Te Pukapuka	Te Whāinga Ako
Tata atu ki ngā Rearua Near Doubles	Pukapuka Tuarima Whārangī 115–116	Kei te ako au ki te whakaoti tāpiritanga mēnā e pātata ana ngā tau tāpiri ki tētahi takirua tau rearua.
E Toru, Nui ake Rānei i te Wā Kotahi Three or More at a Time	Pukapuka Tuarima Whārangī 116–117	Kei te ako au ki te kimi i ngā tau taurite i te tuatahi mēnā e toru, nui ake rānei ngā tau tāpiri, tau tango rānei.
Ngā Rapanga Pēnei i te $67 - \square = 34$ Problems Like $67 - \square = 34$	Pukapuka Tuarima Whārangī 118–119	Kei te ako au ki te whakaoti tangohanga pēnei i te $67 - \square = 39$ mā te huri kia pēnei: $39 + \square = 67$, kia pēnei rānei: $67 - 39 = \square$.
Ka Huri ngā Tau Nui Large Numbers Roll Over	Pukapuka Tuarima Whārangī 119–120	Kei te ako au i te tikanga o te uara tū. Mēnā ka eke atu ki te tekau o tētahi wahi uara tū i tētahi tāpiritanga, ka whakawhiti atu taua tau ki te wāhi uara tū o runga. Mēnā ka heke iho ki te tekau o tētahi wahi uara tū i tētahi tangohanga, ka whakawhiti atu taua tau ki te wāhi uara tū o raro.
Te Whakaranu i ngā Tikanga – He Mahi Whakapakari Hinengaro Mixing the Methods – Mental Exercises for the Day	Pukapuka Tuarima Whārangī 120–121	Kei te ako au ki te āta whiriwhiri i te rautaki tino whai hua hei whakaoti ā-hinengaro i ngā tāpiritanga me ngā tangohanga, ki te whakawhitiwhiti kōrero hoki ki aku hoa ākongā mō aku rautaki.
Ā-Hinengaro, ā-Tuhi Rānei? Mental or Written?	Pukapuka Tuarima Whārangī 121–122	Kei te ako au ki te āta whiriwhiri mēnā ko tētahi rautaki ā-hinengaro, ko tētahi rautaki ā-tuhi rānei te mea tino whai hua.
Te Whakapae Estimation as a Check	Pukapuka Tuarima Whārangī 122–123	Kei te ako au ki te whakatau tata, hei āta tiro tiro i te tika o tētahi tātaitanga tāpiritanga, tangohanga rānei, mēnā kāore e taea e au taua tātaitanga te whakaoti ā-hinengaro.
Ngā Rima Harikoa Fun with Fives	Pukapuka Tuaono Whārangī 19–21	Kei te ako au ki te whiriwhiri i ngā meka whakarea ono, whitu, me waru, mā taku mōhio ki ngā meka whakarea rima.
Te Whakarea Tekau Multiplying Tens	Pukapuka Tuaono Whārangī 21–23	Kei te ako au ki te whakarea mā te 10, mā te 100, mā te 1 000, me ētahi atu taurea o te tekau.
Kia Paku Nui Ake, kia Paku Iti Iho A Little Bit More, a Little Bit Less	Pukapuka Tuaono Whārangī 23–25	Kei te ako au ki te whakaoti whakareatanga mā te tikanga paremata (arā, mā te tāpiri, te tango rānei i tētahi rahinga ki te otinga o tētahi meka whakarea mōhio).

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

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Te Ngohe	Te Pukapuka	Te Whāinga Ako
Te Huri Atu Turn Abouts	Pukapuka Tuaono Whārangi 26–28	Kei te ako au ki te huri kōaro i te raupapa o ngā tau whakarea o tētahi whakareatanga, hei whakamāmā i te tātaitanga.
Ngā Peke Roa Long Jumps	Pukapuka Tuaono Whārangi 28–31	Kei te ako au ki te whakaoti rapanga whakawehe mā te tāpiri tāruarua, mā te whakamahi rānei i ngā meka whakarea mōhio.
Te Tohatoha Goesintas	Pukapuka Tuaono Whārangi 31–34	Kei te ako au ki te whakaoti rapanga whakawehe mā te whakarea.
He Keke Huritau Birthday Cakes	Pukapuka Tuawhitu Whārangi 24–27	Kei te ako au ki te kimi mai i te hautau o tētahi huinga, mā te whakarea.
Ngā Poraka Hautau Fractional Blocks	Pukapuka Tuawhitu Whārangi 27–30	Kei te ako au ki te whakamahi tauira hei kimi i te hautau o tētahi āhua, o tētahi huinga rānei.
He Pēke Kākano Seed Packets	Pukapuka Tuawhitu Whārangi 31–33	Kei te ako au ki te whakaoti rapanga ōwehenga mā te tatau tāruarua.
He Tereina Trains	Pukapuka Tuawhitu Whārangi 33–37	Kei te ako au ki te whakanoho hautau ki waenganui i ngā tauoti.

Ngā Ngohe Hou

Te Huri Tāpiritanga Hei Tangohanga

E ako ana au ki te huri tāpiritanga hei tangohanga, ki te whakaoti i ngā rapanga pēnei i te $\square + 145\ 679 = 623\ 455$.

Rauemi

He ngaku pepa, he kutikuti, he tātaitai.

Te Whakamahi Rauemi

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Tuhia te rapanga nei ki te papa tuhituhi, ka pānui ai.</p> <p>Tuhia te whārite ki te papa tuhituhi.</p>	<p>Anei te rapanga hei tiroiro mā tātou:</p> <p>\$1,858 kei te pūtea pēke a Orongo. Ka whakaurua he moni atu anō e tōna koroua, ka eke ki te \$5,683 te tapeke o tana pūtea i nāianei. E hia te moni i whakaurua e tōna koroua? Me pēhea te tuhi hei whārite? ($1\ 858 + \square = 5\ 683$)</p>

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Te Mahi a te Pouako	He Taura Kōrero mā te Pouako				
<p>Whakatauiratia te rapanga ki te ngaku pepa.</p>	<p>Tangohia kia rua ngā ngaku pepa, kia ōrite te roa. Tuhia te 5 683 ki tētahi – koirā hei tohu i te tapeke o tana pūtea.</p> <p>Tuhia he rārangi hei whakawehe i te ngaku tuarua. Ko tētahi o ngā wehenga hei whakaatu i te rahi o tana pūtea i te tīmatanga, arā te 1 858.</p> <p>Whakatakotoria ngā ngaku pepa tētahi ki raro i tētahi.</p> <table border="1"> <tr> <td colspan="2" style="text-align: center;">5 683</td> </tr> <tr> <td style="text-align: center;">1 858</td> <td style="text-align: center;">?</td> </tr> </table> <p>E tohu ana te wehenga tuarua i te aha? (Koirā hei tohu i te moni ka whakaurua e te koroua. Tāpirihia te 1 858 me te moni i whakaurua e te koroua, ka eke ki te 5 683.)</p> <p>Nō reira me pēhea te tātai i te rahi o te moni i whakaurua e te koroua? (Tangohia te rahi o te moni i roto i te pūtea pēke i te tīmatanga, mai i te moni i te pūtea i te whakamutunga. Tangohia tēnei wehenga o te ngaku pepa, ka toe mai te rahi o te moni i whakaurua e te koroua.)</p> <p>Whakamahia he tātaitai hei whakaoti i te tangohanga.</p> <p>Koinei te tāpiritanga i te tīmatanga: $1\ 858 + \square = 5\ 683$</p> <p>Kua hurihia hei tangohanga: $5\ 683 - 1\ 858 = \square$</p>	5 683		1 858	?
5 683					
1 858	?				
<p>Kia pērā anō te mahi hei whakakaoti i ētahi atu rapanga.</p> <p>Hei taura:</p> <p>He koha pane kuini te mahi pai ki a Horowai. E 355 ngā pane kuini i hoatu ki a ia mō tōna huritau, ka eke ki te 6 040 te maha o āna pane kuini i nāianei. E hia āna pane kuini i te tīmatanga?</p> <p>$\square + 355 = 6\ 040$</p> <p>Tonoa mā ngā ākongā e whakaaro he pakitau mō ēnei:</p> <p>$\square + 7\ 928 = 30\ 281$ $\\$234.56 + \square = \\789.40</p> <p>$3\ 333 + \square = 4\ 141$ $\square + 5\ 601 = 45\ 893$</p>					

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

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Te Whakaahua ā-Hinengaro

Te Mahi a te Pouako	He Taurira Kōrero mā te Pouako
<p>Tuhia te rapanga ki te papa tuhituhi, ka pānui ai.</p> <p>Tuhia te whārite ki te papa tuhituhi.</p> <p>Tuhia he ngaku ki te papa tuhituhi.</p> <div style="border: 1px solid black; width: 100px; margin: 10px auto; text-align: center;">601</div> <p>Ārahina ngā ākongā ki te huri i te tāpiritanga hei tangohanga.</p>	<p>Anei anō tētahi rapanga.</p> <p>E hiahia ana a Rāpata ki te hoko pahikara. \$345 te rahi o āna moni, engari, \$601 te utu hei hoko i te pahikara. E hia atu anō ngā moni hei penapena māna?</p> <p>Me pēhea te tuhi i te rapanga nei hei whārite? $(345 + \square = 601)$</p> <p>Anei te ngaku pepa hei tohu i te utu o te pahikara. Āta whakaaro i roto i ō koutou hinengaro te ngaku pepa tuarua.</p> <p>E hia ngā wehenga o taua ngaku pepa? (E 2.)</p> <p>Ko te wehenga tuatahi hei tohu i te aha? (Hei tohu i te rahi o te pūtea a Rāpata, arā, te \$345.)</p> <p>E tohu ana te wehenga tuarua o te ngaku i te aha? (I te moni e toe ana hei penapena tonu mā Rōpata.)</p> <p>Me pēhea te tātai i te rahi o taua wehenga – te rahi o te moni hei penapena anō māna? (Tangohia te \$345 i te \$601. Tangohia te rahi o tana pūtea i te utu o te pahikara, ka toe mai ko te moni hei penapena tonu māna.)</p> <p>Tuhia te whārite, ka whakaoti ai. $(601 - 345 = \square)$</p> <p>Koinei te tāpiritanga i te tīmatanga: $345 + \square = 601$</p> <p>Kua hurihia hei tangohanga: $601 - 345 = \square$</p>
<p>Anei anō ētahi rapanga hei whakaoti mā te whakaahua ā-hinengaro, hei tuhi pakitau hoki:</p> <p>$567 + \square = 6\ 012$ $\square + 9\ 567 = 12\ 211$</p> <p>$\square + 6\ 443 = 14\ 601$ $\\$291.36 + \square = \\$1,089.43$</p>	

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Te Whakamahi Tikanga Tau

Hurihia ēnei tāpiritanga hei tangohanga, ka whakaoti ai mā te tātaitai.

$$44\,675.83 + \square = 76\,645.93$$

$$\square + 345.67 = 5\,678.09$$

$$444 + \square = 800$$

$$484\,609 + \square = 1\,678\,980$$

$$\square + 34.78902 = 56.00912$$

He Pātai Aromatawai

Titiro ki tēnei whārite: $a + \square = e$. Ko te a me te e hei tohu i ētahi tau e rua. Me pēhea te tātai i te tau e tika ana mō roto i te pouaka? (Hurihia hei tangohanga: $e - a = \square$)

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

EA

AA

Te Huri Tangohanga hei Tangohanga Kē Atu Anō

AM

E ako ana ahau ki te whakaoti rapanga tangohanga pēnei i te $74\,567 - \square = 28\,973$.

AP

Rauemi

He ngaku pepa, he tātaitai.

Te Whakamahi Rauemi

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako					
<p>Tuhia te rapanga ki te papa tuhituhi, ka pānui ai.</p> <p>Tuhia te whārite ki te papa tuhituhi.</p> <p>Whakatauiratia te tangohanga ki te ngaku pepa.</p> <p>Whakamāramatia te huringa o te tangohanga hei tangohanga kē atu.</p>	<p>Anei te rapanga hei tiro tiro mā tātou:</p> <p>\$13,800 te utu mō te motokā hou e hiahia ana a Horiana ki te hoko. Nā tōna matua i hoatu tētahi pūtea hei āwhina i a ia, engari \$7,890 e toe ana hei kimi māna. E hia te rahi o te pūtea nā tōna matua i hoatu?</p> <p>Me pēhea te tuhi whārite hei whakaatu i tēnei rapanga? ($13\,800 - \square = 7\,890$)</p> <p>Tangohia ētahi ngaku pepa e rua, kia ōrite te roa. Ko te ngaku tuatahi hei tohu i te katoa o te utu mō te motokā. Tuhia te 13 800 ki taua ngaku pepa. Wehea te ngaku tuarua kia rua ngā wāhanga. Ko te wāhanga tuatahi hei tohu i te rahi o te pūtea nā te matua o Horiana i hoatu. Tuhia tēnā ki taua wāhanga.</p> <table border="1"><tr><td style="text-align: right;">13 800</td></tr><tr><td>te moni nā tana matua i hoatu</td></tr></table> <p>E tohu ana te wāhanga tuarua o te ngaku pepa i te aha? (I te moni e toe ana hei kimi tonu mā Horiana.)</p> <p>E hia te moni hei kimi tonu māna? (\$7,890.)</p> <p>Tuhia tēnā ki taua wāhanga o te ngaku pepa.</p> <table border="1"><tr><td style="text-align: right;">13 800</td></tr><tr><td>te moni nā tana matua i hoatu</td><td style="text-align: right;">7 890</td></tr></table>	13 800	te moni nā tana matua i hoatu	13 800	te moni nā tana matua i hoatu	7 890
13 800						
te moni nā tana matua i hoatu						
13 800						
te moni nā tana matua i hoatu	7 890					

EA

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AP

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
	<p>Me pēhea te tātai i te rahi o te moni nā tōna matua i hoatu? (Tangohia te 7 890 i te 13 800. Tangohia te rahi o te moni hei kimi tonu māna, i te utu o te motokā.)</p> <p>Tuhia tēnā hei whārite: $13\ 800 - 7\ 890 = \square$.</p> <p>Whakamahia te tātai hei whakaoti i te tangohanga.</p> <p>Koinei te whārite i te tīmatanga: $13\ 800 - \square = 7\ 890$</p> <p>Kua hurihia taua tangohanga hei tangohanga kē atu: $13\ 800 - 7\ 890 = \square$</p>
<p>Tonoa mā ngā ākonga e whakamahi he ngaku pepa hei whakaoti i ētahi atu tangohanga.</p> <p>Hei tauira:</p> <p>$4\ 567 - \square = 5\ 678$ $12.45 - \square = 7.01$ $20\ 008 - \square = 13\ 856$</p>	

Te Whakaahua ā-Hinengaro

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Tuhia te rapanga ki te papa tuhituhi, ka pānui ai.</p> <p>Tuhia te ngaku pepa hei tohu i te 3 190 ahiporaka ki te papa tuhituhi.</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin-left: auto; margin-right: auto;"> <p style="text-align: center;">3 190</p> </div>	<p>3 190 ngā ahiporaka hei hoko i te rā mahi moni o te kura. I te mutunga o te rā, 345 ngā ahiporaka e toe ana. E hia ngā ahiporaka i hokona atu?</p> <p>He aha te whārite hei whakaatu i tēnei rapanga?</p> <p>($3\ 190 - \square = 345$. I te tīmatanga o te rā, 3 190 ngā ahiporaka. Tangohia te maha o ngā ahiporaka i hokona, ko te 345 ahiporaka e toe mai ana.)</p> <p>Koinei te ngaku pepa hei tohu i te 3 190 ahiporaka i te tīmatanga o te rā.</p>

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

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Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako				
	<p>Āta whakaarohia te ngaku pepa tuarua. Wehea ki ētahi wāhanga e rua. E tohu ana te wāhanga tuatahi i te aha? (I ngā ahiporaka i hokona i te rā mahi moni o te kura.)</p> <p>E tohu ana te wehenga tuarua i te aha? (I te 345 ahiporaka e toe mai ana.)</p> <p>Me pēhea te tātai i te rahi o te wāhanga tuatahi, arā, te maha o ngā ahiporaka i hokona atu? (Tangohia te 345 i te 3 190.)</p> <p>Tuhia hei whārite: $3\ 190 - 345 = \square$.</p> <p>Whakaotia mā te tātatitai.</p>				
<p>Kia pērā anō te mahi hei whakaoti i ēnei rapanga:</p> <table><tbody><tr><td>$4\ 567 - \square = 2\ 888$</td><td>$102.45 - \square = 41.89$</td></tr><tr><td>$12\ 789 - \square = 5692$</td><td>$23.456 - \square = 4.991$</td></tr></tbody></table>		$4\ 567 - \square = 2\ 888$	$102.45 - \square = 41.89$	$12\ 789 - \square = 5692$	$23.456 - \square = 4.991$
$4\ 567 - \square = 2\ 888$	$102.45 - \square = 41.89$				
$12\ 789 - \square = 5692$	$23.456 - \square = 4.991$				

Te Whakamahi Tikanga Tau

Hurihia ēnei tangohanga hei tangohanga kē atu anō, ka whakaoti ai mā te tātatitai (engari kua e whakamahi tātatitai hei whakaoti i ngā rapanga hautau).

$$0.003456 - \square = 0.0000312$$

$$10\frac{3}{7} - \square = 1\frac{1}{7}$$

$$\frac{67}{77} - \square = \frac{3}{77}$$

$$3\frac{1}{2} - \square = 1\frac{1}{2}$$

$$23\frac{1}{11} - \square = 13$$

He Pātai Aromatawai

Titiro ki tēnei whārite: $a - \square = e$.

Ko te a me te e hei tohu i ētahi tau e rua. Me pēhea te tātai i te tau e tika ana mō roto i te pouaka?

(Hurihia hei tangohanga: $a - e = \square$)

EA

AA

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Te Huri Tangohanga Hei Tāpiritanga

E ako ana ahau ki te whakaoti rapanga tangohanga pēnei i te $\square - 7\,566 = 13\,987$.

Rauemi

He ngaku pepa, he tātaitai.

Te Whakamahi Rauemi

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako		
<p>Tuhia te rapanga ki te papa tuhituhi, ka pānui ai.</p> <p>Tuhia te whārite ki te papa tuhituhi.</p> <p>Whakatauiratia te whārite ki te ngaku pepa.</p> <p>Whakamāramatia te huringa o te tangohanga hei tāpiritanga.</p>	<p>Ka haere a Kahurangi ki te hoko taonga. Ka pau i a ia te \$345.60. Ko te \$208.95 ka toe mai. E hia āna moni i te tīmatanga?</p> <p>He aha te whārite hei whakaatu i tēnei rapanga? ($\square - 345.60 = 208.95$)</p> <p>Tangohia ētahi ngaku pepa e rua. Ko te mea tuatahi hei tohu i te rahi o āna moni i te tīmatanga. Tuhia tēnā ki te ngaku pepa.</p> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <p>ngā moni a Kahurangi i te tīmatanga</p> </div> <p>Wehea te ngaku pepa tuarua kia rua ngā wāhanga. Ko tētahi wāhanga hei tohu i ngā moni ka pau i a Kahurangi. E tohu ana te wāhanga tuarua i te aha? (Koirā hei tohu i te moni e toe mai ana ki a Kahurangi.)</p> <table border="1" style="margin: 0 auto;"> <tr> <td style="text-align: center;">345.60</td> <td style="text-align: center;">208.95</td> </tr> </table> <p>Nō reira, me pēhea te tātai i te rahi o ngā moni a Kahurangi i te tīmatanga? (Tāpirihia te 345.60 me te 208.95. Tāpirihia te moni i pau i a ia me te moni i toe mai.)</p> <p>Tuhia te whārite, ka whakaoti ai mā te tātaitai. ($345.60 + 208.95 = 554.55$).</p>	345.60	208.95
345.60	208.95		

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

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Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
	Koinei te whārite i te tīmatanga: $\square - 345.60 = 208.95$. Kua hurihia hei tāpiritanga: $345.60 + 208.95 = \square$.
Whakamahia he ngaku pepa hei whakaoti i ētahi atu rapanga, pēnei i ēnei: $\square - 345 = 789$ $\square - 456 = 102$ $\square - 274 = 31$ $\square - 67.9 = 43.19$ $\square - 67 = 90$ $\square - 1\ 000 = 3\ 000$	

Te Whakaahua ā-Hinengaro

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Tuhia te rapanga ki te papa tuhituhi, ka pānui ai.</p> <p>Tuhia te ngaku pepa hei tohu i te katoa o te tawhiti ki te papa tuhituhi.</p> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <p>te tawhiti mai i Taupō ki Kirikiriroa</p> </div>	<p>E haere ana a Roimata mai i Taupō ki Kirikiriroa. Kua oti te 87 manomita (km), 96 manomita e toe ana. E hia manomita mai i Taupō ki Kirikiriroa?</p> <p>He aha te whārite hei whakaatu i tēnei rapanga? ($\square - 87 = 96$. Tangohia te 87 manomita i te katoa o te tawhiti, ko te 96 manomita ka toe mai.)</p> <p>Koinei te ngaku pepa hei tohu i te katoa o te tawhiti mai i Taupō ki Kirikiriroa.</p> <p>Āta whakaarohia te ngaku pepa tuarua. Wehea ki ētahi wāhanga e rua. E tohu ana te wāhanga tuatahi i te aha? (I te tawhiti kua oti kē te haere.)</p> <p>E hia manomita tērā? (87.)</p> <p>E tohu ana te wehenga tuarua i te aha? (I te tawhiti e toe tonu ana, arā, te 96 manomita.)</p> <p>Me pēhea te tātai i te katoa o te tawhiti? (Tāpirihia te 87 me te 96.)</p> <p>Tuhia hei whārite: $87 + 96 = \square$.</p> <p>Whakaotia.</p>
Kia pērā anō te mahi hei whakaoti i ēnei rapanga: $\square - 200 = 400$ $\square - 220 = 230$ $\square - \$7.90 = \3.10 $\square - 111 = 238$ $\square - 10\ 000 = 4\ 500$	

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Te Whakamahi Tikanga Tau

Tuhia he pakitau mō ēnei tangohanga, ka whakaoti ai mā te tātaitai (engari kaua e whakamahi tātaitai hei whakaoti i ngā rapanga hautau).

– $212.98 = 600.0034$

– $200.08 = 45.89$

– $7.9909 = 3.1091$

– $10 = \frac{3}{4}$

– $2\frac{1}{3} = \frac{1}{3}$

– $0.04 = 0.0009$

He Pātai Aromatawai

Titiro ki tēnei whārite: – $a = e$.

Ko te a me te e hei tohu i ētahi tau e rua. Me pēhea te tātai i te tau e tika ana mō roto i te pouaka?

(Hurihia hei tāpiritanga: $a + e = \square$)

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

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Te Tiroiro i te Tika o te Tāpiritanga me te Tangohanga mā te Whakatau Tata

E whakapakari ana ahau i taku mōhio ki te tika, te hē rānei o tētahi tāpiritanga, tangohanga, mā te whakatau tata.

Rauemi

Whārangi Tārua 8–1.

Te Whakamahi Tikanga Tau

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Pānuihia te rapanga nei, ka tuhi ai i te tāpiritanga ki te papa tuhituhi.</p> <p>Whakawhitiwhiti kōrero mō te tika, mō te hē rānei o te otinga.</p> <p>Tuhia te tāpiritanga ki te papa tuhituhi.</p> <p>Tuhia hoki te tāpiritanga whakatau tata ki raro iho: $34\ 567 + 478 = 35\ 045$ $34\ 500 + 500 = 35\ 000$</p>	<p>Ka whakamahi a Huriana i tāna tātaitai ki te whakaoti i te tāpiritanga $34\ 567 + 478$. Ko te $34\ 089$ te otinga ka puta.</p> <p>Koinei te tāpiritanga a Huriana me tana otinga: $34\ 567 + 478 = 34\ 089$.</p> <p>Āta titiro ki te otinga. Kei te tika, kei te hē rānei te otinga a Huriana? (Kei te hē.)</p> <p>He aha tātou e mōhio ai kei te hē te otinga nei? (Nā te mea he iti ake te otinga i te $34\ 567$. E tika ana kia rahi kē atu i te $34\ 567$ nā te mea he tāpiritanga.)</p> <p>He aha pea i hē ai a Huriana? (Te āhua nei i pēhia te pātuhitanga.)</p> <p>Ka whakamahi anō a Huriana i tāna tātaitai ki te whakaoti i te tāpiritanga. Anei te whārite me te otinga i tēnei wā: $34\ 567 + 478 = 35\ 045$.</p> <p>Kei te takiwā o te tika, kei te hē tonu rānei tēnei otinga?</p> <p>(E rua pea ngā whakautu: - Ākene pea kei te tika. Ki te whakatau tata, ko te $34\ 500$ tāpirihia te 500, ka $35\ 000$. He tino pātata te $35\ 000$ ki te otinga a Huriana, nō reira pea e tika ana.) - Ki te tāpirihia te 567 me te 478, he paku te rahinga ake i te $1\ 000$. Nō reira he paku te rahinga ake i te $35\ 000$ te otinga o te tāpiritanga.)</p>
<p>Hoatu te Whārangi Tārua 8–1 hei mahinga mā ngā ākonga.</p>	

He Pātai Aromatawai

Whakamāramatia mai me pēhea te whakatau tata i te otinga o tēnei tāpiritanga me tēnei tangohanga:

$27\ 812 + 1\ 197$

$2\ 637 - 1\ 592$

Te Wāhanga 5

Te Kaupae 7: Te Wāwāhi Tau Whakarea

Ngā Ngohe i Pukapuka Kē

Te Ngohe	Te Pukapuka	Te Whāinga Ako
Te Tapahi me te Kāpia Cut and Paste	Pukapuka Tuaono Whārangī 36–39	Kei te ako au ki te whakaoti whakareatanga mā te rearua/haurua, me te reatoru/hautoru.
He Hākari Whakareatanga Multiplication Smorgasbord	Pukapuka Tuaono Whārangī 39–42	Kei te ako au ki te whakaoti whakareatanga mā te whānui o ngā rautaki ā-hinengaro.
Ngā Mōkihi Ōwehenga Proportional Packets	Pukapuka Tuaono Whārangī 42–45	Kei te ako au ki te whakaoti rapanga whakawehe mā te whakamahi i te tikanga pānga riterite.
Te Ako ki te Tunu Pihikete The Royal Cooking Lessons	Pukapuka Tuaono Whārangī 45–47	Kei te ako au ki te whakaoti rapanga whakawehe mā te whakahuri ki tētahi rapanga māmā ake, engari he rite tonu te otinga.
Ngā Toenga Remainders	Pukapuka Tuaono Whārangī 48–50	Kei te ako au ki te whakaoti rapanga whakawehe e whai wāhi mai ana he toenga.
Te Kaha o te Tuhi Paper Power	Pukapuka Tuaono Whārangī 51–54	Kei te ako au ki te whakaoti rapanga whakarea, whakawehe hoki mā te whai i ngā tikanga tuhi.
Te Whakawhiti Otinga Cross Products	Pukapuka Tuaono Whārangī 54–56	Kei te ako au ki te whakarea tauoti mati-maha, mā te wāwāhi uara tū.
Te Tāpiri me te Tango Tau ā-Ira Pipe Music with Decimals	Kāore anō kia puta	Kei te ako au ki te tāpiri, ki te tango hoki i ngā tau ā-ira.
He Papa Hautanga ā-Ira Decimats	Pukapuka Tuawhitu Whārangī 39–42	Kei te ako au ki te kimi hautau ōrite, ki te whakaingoa hoki i ngā hautau hei tau ā-ira.
He Poro Rare Candy Bars	Kāore anō kia puta	Kei te ako au i te rahi e tohua mai ana e ngā mati ki ia taha o te ira, ki te whakaoti paheko hoki e whai wāhi mai ana he tau ā-ira.

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Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

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Ngā Ngohe Hou

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Te Huri Kōaro i te Whakareatanga me te Wehenga

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E ako ana ahau ki te whakaoti i te whakareatanga me te wehenga mā te huri kōaro i te paheko.
Hei tauira: $263 \times \square = 456 \leftrightarrow 456 \div 263 = \square$.

Rauemi

He mataono honohono, he tātaitai, Whārangi Tārua 8–2.

Te Whakamahi Rauemi

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Tuhia te whārite ki te papa tuhituhi, ka whakawhitiwhiti kōrero ai, me pēhea te whakaoti mā te tātaitai.</p> <p>Whakatauiratia ki ngā mataono honohono.</p> <p>Tuhia ngā whārite e rua ki te papa tuhituhi.</p>	<p>Anei te whārite māmā hei tiroiro mā tātou: $6 \times \square = 18$.</p> <p>He aha ngā pātuhi ka pēpēhia i te tātaitai hei whakaoti i tēnei whārite? ($18 \div 6 = \square$)</p> <p>Ka tika, ka hurihia te whakareatanga hei wehenga. Titiro ki ēnei mataono. Tekau mā waru katoa ngā mataono. Mēnā ka wehea ngā mataono 18 ki ngā rōpū o te ono, e hia katoa ngā rōpū? (E toru.)</p> <div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; width: 100px; height: 20px;"></div> <div style="border: 1px solid black; width: 100px; height: 20px;"></div> <div style="border: 1px solid black; width: 100px; height: 20px;"></div> <div style="border: 1px solid black; width: 100px; height: 20px;"></div> <div style="border: 1px solid black; width: 100px; height: 20px;"></div> <div style="border: 1px solid black; width: 100px; height: 20px;"></div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="border: 1px solid black; width: 100px; height: 20px;"></div> <div style="border: 1px solid black; width: 100px; height: 20px;"></div> <div style="border: 1px solid black; width: 100px; height: 20px;"></div> <div style="border: 1px solid black; width: 100px; height: 20px;"></div> <div style="border: 1px solid black; width: 100px; height: 20px;"></div> <div style="border: 1px solid black; width: 100px; height: 20px;"></div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="border: 1px solid black; width: 100px; height: 20px;"></div> <div style="border: 1px solid black; width: 100px; height: 20px;"></div> <div style="border: 1px solid black; width: 100px; height: 20px;"></div> <div style="border: 1px solid black; width: 100px; height: 20px;"></div> <div style="border: 1px solid black; width: 100px; height: 20px;"></div> <div style="border: 1px solid black; width: 100px; height: 20px;"></div> </div> <p>$6 \times \square = 18$ $18 \div 6 = \square$</p>
<p>Hoatu ētahi atu whārite māmā hei whakatauiratia ki ngā mataono honohono.</p>	<p>Anei ētahi atu whārite whakarea. Whakatauiratia ngā whakareatanga ki te mataono honohono, kātahi ka tuhi ai hei wehenga. Whakamāramatia atu ki tō hoa te huringa o te whakareatanga hei wehenga.</p> <p>$3 \times \square = 15$ $4 \times \square = 24$ $5 \times \square = 35$ $6 \times \square = 12$</p>

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Te Whakamahi Tikanga Tau

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Tuhia te rapanga ki te papa tuhituhi, ka pānui ai.</p> <p>Whakawhitiwhiti kōrero me pēhea te whakaoti mā te tātaitai.</p> <p>Tuhia te whakareatanga māmā, ka whakatairite ai ki te whakareatanga māmā.</p> <p>Whakawhitiwhiti kōrero mō te whakaawhiwhi i te otinga.</p>	<p>\$13.89 te utu hei hoko i te manokaramu ika i te hokomaha.</p> <p>\$56.80 te utu o te ika i hokona e Rangiroa. E hia manokaramu te taumaha o te ika i hokona e Rangiroa?</p> <p>Me pēhea te tuhi whārite hei whakaatu i te rapanga nei? ($13.89 \times \square = 56.80$)</p> <p>Kia hoki tātou ki te tiroiro i te otinga o te whakareatanga māmā $6 \times \square = 18$. He aha ngā pātuhi ka pēpēhia i te tātaitai? ($18 \div 6 =$)</p> <p>Ka tika ka hurihia hei wehenga:</p> <p>$6 \times \square = 18 \rightarrow 18 \div 6 = \square$</p> <p>Nō reira, me pēhea te whakaoti i te whakareatanga uaua nei i te tātaitai? (Hurihia hei wehenga.</p> <p>$13.89 \times \square = 56.80 \rightarrow 56.80 \div 13.89 = \square$)</p> <p>He aha te otinga ka puta ki te tātaitai? (4.089272858)</p> <p>He aha te waeine? (Ko te manokaramu.)</p> <p>Nō reira he aha te otinga whaitake? E whaitake ana ngā mati katoa i muri i te ira? (Ko te 4.089 manokaramu te otinga whaitake. Kāore he take o te taumaha iti ake i te karamu. Nō reira ko te 4.089 te otinga ki te 0.001 manokaramu (1g) e pātata ana.</p>

He Pātai Aromatawai

Ko te a me te e hei tohu i ētahi tau e rua i ngā whārite nei.

He aha ngā pātuhi i te tātaitai hei pēpēhi e puta ai te otinga?

$a \times \square = e$ te whakautu: $e \div a = \square$

$a \div \square = e$ te whakautu: $a \div e = \square$

$\square \div a = e$ te whakautu: $a \times e = \square$

$\square \times a = e$ te whakautu: $e \div a = \square$

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

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Te Tiroiro i te Tika o te Whakareatanga mā te Whakatau Tata

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E whakapakari ana ahau i taku mōhio ki te tika, te hē rānei o tētahi whakareatanga, mā te whakatau tata.

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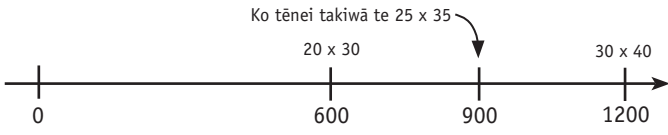
Rauemi

Whārangī Tārua 8–3.

Te Whakamahi Tikanga Tau

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Pānuihia te rapanga nei, ka tuhi ai i te whakareatanga ki te papa tuhituhi.</p> <p>Whakawhitiwhiti kōrero mō te tika, te hē rānei o te otinga.</p>	<p>Ka whakamahi a Miriama i tana tātaitai ki te whakaoti i te whakareatanga 32×78. Ko te 2 574 te otinga ka puta.</p> <p>Koinei te whakareatanga a Miriama me tana otinga: $32 \times 78 = 2\,574$.</p> <p>Āta tiroiro ki te otinga. Ki te tiroiro atu, kei te tika, kei te hē rānei te otinga a Miriama? (Kei te hē.)</p> <p>He aha tātou e mōhio ai kei te hē te otinga nei? (Ki te whakareatia ngā mati tahi – arā te 2 ki te 8 – ko te 16 te otinga. Nō reira ko te 6 te mati tahi i te otinga, kāore te 4.)</p>
<p>Kia pērā anō mō tēnei o ngā rapanga.</p>	<p>Ka whakamahi a Maioha i tana tātaitai ki te whakaoti i te whakareatanga 32×78. Ko te 2 856 te otinga ka puta.</p> <p>Koinei te whakareatanga a Maioha me tana otinga: $32 \times 78 = 2\,856$.</p> <p>Āta tiroiro ki te otinga. Ki te tiroiro atu, kei te tika, kei te hē rānei te otinga a Maioha? (Kei te hē anō.)</p> <p>He aha tātou e mōhio ai kei te hē te otinga nei? (Ki te whakaawhiwhia te 32 ki te 30 me te 78 ki te 80, ko te 30×80 te whakareatanga āwhiwhi. Ko te 2 400 te otinga. Ki te tiroiro atu, he tawhiti rawa te 2 856.)</p>

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Te Mahi a te Pouako	He Taura Kōrero mā te Pouako
<p>Kia pērā anō mō tēnei o ngā rapanga.</p>	<p>Me pēhea te whakatau tata i te whakareatanga nei, te 25.45×35.02? Ki te whakaotia mā te tātaitai, me pēhea tātou e mōhio ai mēnā kei te tika, kei te hē rānei te patopato i ngā tau?</p> <p>(He tau māmā ngā tau ngahuru, nō reira ka whakaawhiwhia ki ngā tau ngahuru. Ki te whakaawhiwhia ki raro, ko te 20×30 te whakareatanga āwhiwhi. Ki te whakaawhiwhia ki runga, ko te 30×40 te whakareatanga āwhiwhi. E taea ana te tuhi ki te rārangi tau:</p>  <p>Ko te 900 kei waenganui i te 600 me te 1 200, nō reira kei te takiwā o te 900 te otinga tika.)</p>
<p>He rerekē anō te rautaki whakatau tata mō tēnei rapanga.</p>	<p>He aha te whakatau tata mō te whakareatanga 29.023×88.912?</p> <p>(Ki te whakaawhiwhia ngā tau whakarea ki te tau ngahuru, ko te 30×90. Ko te 2 700 te otinga āwhiwhi. He nui ake te 30 i te 29.023. He nui ake hoki te 90 i te 88.912. Nō reira he nui ake te 2 700 i te otinga tika.)</p>
<p>Hoatu te Whārangi Tārua 8–3 hei whakaoti mā ngā ākonga. Koa ngā ākonga e whakamahi tātaitai.</p>	

He Pātai Aromatawai

Tuhia tētahi tau ā-ira matiwhā me tētahi tau ā-ira matitoru. Whakamāramatia mai me pēhea te whakatau tata i te otinga o te whakareatanga o ēnei tau e rua.

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

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Te Tiroiro i te Tika o te Wehenga mā te Whakatau Tata

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E whakapakari ana ahau i taku mōhio ki te tika, te hē rānei o tētahi wehenga, mā te whakatau tata.

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Rauemi

Whārangi Tārua 8–4.

Te Whakamahi Tikanga Tau

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Pānuihia te rapanga nei, ka tuhi ai i te wehenga ki te papa tuhituhi.</p> <p>Whakawhitiwhiti kōrero mō te whakatau tata i te otinga.</p> <p>Tuhia te whārite whakaawhiwhi ki te papa tuhituhi. ($1\ 337 \div 70$)</p> <p>Tuhia te whārite whakaawhiwhi ki te papa tuhituhi. ($1\ 400 \div 70$)</p>	<p>69 ngā kōpae puoro i hokona, \$1,337 te katoa o te utu mō aua kōpae puoro. Whakatau tata i te utu mō te kōpae kotahi.</p> <p>He aha te whārite hei whakaata i tēnei rapanga? ($1\ 337 \div 69 = \square$)</p> <p>Me pēhea te whakatau tata i te otinga? Mēnā ka whakaotia mā te tātaitai, me pēhea tātou e mōhio ai mēnā kei te takiwā o te tika te otinga, i hē rānei te patopato i ngā tau?</p> <p>(Me whakaawhiwhi ngā tau ki ētahi tau māmā. E pātata ana te 69 ki te 70. He tau māmā te 70. E pēnei ana te wehenga i nāiane: $1\ 337 \div 70$.)</p> <p>(He tau uaua tonu te 1 337. Mēnā ka whakaawhiwhia ki raro ki te 1 300, ki te 1 000 rānei, he uaua tonu te whakaoti i te wehenga. He māmā ake mēnā ka whakaawhiwhia ki runga ki te 1 400. He māmā te whakawehe i te 1 400 ki te 70, arā, ko te 20.)</p> <p>($1\ 400 \div 70 = 20$. Nō reira kei te takiwā o te \$20 te utu mō ia kōpae puoro.)</p>
<p>Hoatu te Whārangi Tārua 8–4 hei whakaoti mā ngā ākongā.</p>	

He Pātai Aromatawai

Tuhia te wehenga o tētahi tau ā-ira matiwhā ki tētahi tau ā-ira matirua. Whakamāramatia mai me pēhea te whakatau tata i te otinga o te wehenga.

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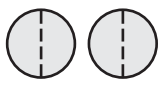
Kaua e Huri Kōaro i te Wehenga!

E ako ana ahau he tino whaitake te raupapa o ngā tau i roto i tētahi wehenga.

Rauemi

He poraka hautau.

Te Whakamahi Rauemi

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Tuhia te rapanga nei ki te papa tuhituhi, ka pānui ai.</p> <p>Whakatauriria te rapanga ki ngā poraka hautau.</p>	<p>E 4 ngā tiakarete a Hēni hei tohatoha ki ētahi tāngata tokorua. E 2 ngā tiakarete a Roimata hei tohatoha ki ētahi tāngata tokowhā. He aha te whiwhinga a ia tangata?</p> <p>Tuatahi, me tuhi whārite hei whakaata i ngā rapanga e rua.</p> <p>Mō Hēni, wehea ngā tiakarete e whā ki te 2. Arā, $4 \div 2 = \square$.</p> <p>Mō Roimata, wehea ngā tiakarete e rua ki te 4. Arā, $2 \div 4 = \square$.</p> <p>Whakaaturia ngā wehenga e rua nei ki ngā poraka hautau.</p> <p>$4 \div 2$ </p> <p>$2 \div 4$ </p> <p>Tuhia ngā otinga o ngā whārite: $4 \div 2 = 2$ $2 \div 4 = \frac{1}{2}$</p>
<p>Kia pērā anō ngā mahi mō ēnei wehenga takirua: $6 \div 2$ me $2 \div 6$ $6 \div 3$ me $3 \div 6$ $12 \div 2$ me $2 \div 12$</p>	

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

EA
AA
AM
AP

Te Whakamahi Tikanga Tau

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Āta tirohia ngā otinga o ngā wehenga takirua i runga nei. Arā:</p> $6 \div 2 = 3$ $2 \div 6 = \frac{1}{3}$ $6 \div 3 = 2$ $3 \div 6 = \frac{1}{2}$ $12 \div 2 = 6$ $2 \div 12 = \frac{1}{6}$	<p>Titiro ki te otinga o ngā wehenga takirua nei. He aha te tauira e kitea mai ana?</p> <p>(Ki te huri kōaro i te raupapa o ngā tau i roto i tētahi wehenga, ka huri kōaro anō te otinga.)</p>
<p>Whakamahia te tikanga i kitea i runga nei hei whakaoti i ngā takirua wehenga nei:</p> $15 \div 3 \text{ me } 3 \div 15 \qquad 100 \div 10 \text{ me } 10 \div 100 \qquad 60 \div 3 \text{ me } 3 \div 60$	

He Pātai Aromatawai

Ko te a , te e , me te h hei tohu i ētahi tau e toru i ngā whārite nei. Mēnā $a \div e = h$, he aha te otinga o te $e \div a$?
($e \div a = \frac{1}{h}$)

EA

AA

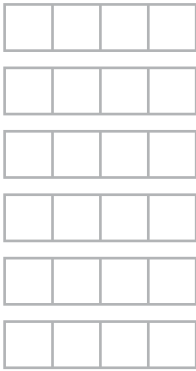
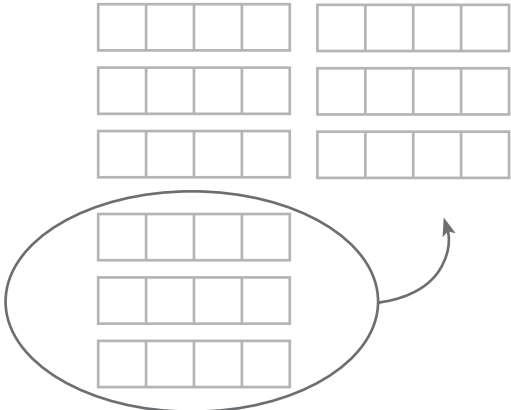
AM

AP

Te Tikanga o te Tohu Ōrite

E ako ana ahau ki te tikanga o te tohu ōrite, arā, he ōrite te otinga o te taha mauī o te tohu ōrite ki te otinga o te taha matau.

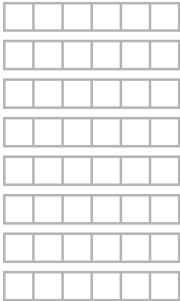

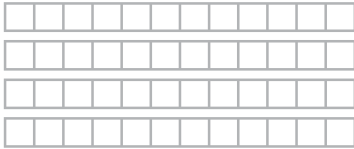

Te Whakamahi Rauemi

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Whakatauiratia te whakareatanga 4×6 ki ngā mataono honohono.</p> <p>Whakawhitiwhiti kōrero mō te ōritenga ki te 8×3.</p>	<p>Titiro ki tēnei whakareatanga (4×6). Whakamāramatia mai te tikanga. (E 6 ngā rōpū o te 4. Timata ki te 4, whakareatia ki te 6.)</p> <p>Me pēhea te whakatauiria ki ngā mataono honohono? (Hangaia kia 6 ngā rōpū o te 4.)</p> <div style="text-align: center;">  </div> <p>E hia katoa ngā mataono honohono? (E 24.)</p> <p>Whakatauiratia tēnei o ngā whakareatanga ki ngā mataono honohono (8×3). E hia katoa ngā mataono honohono? (E 24 anō.)</p> <div style="text-align: center;">  </div> <p>Nō reira, ka taea te tuhi whārite hei whakaatu i te ōritenga o ēnei whakareatanga. Tuhia te whārite. ($4 \times 6 = 8 \times 3$)</p>

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

- EA
- AA
- AM
- AP

Te Mahi a te Pouako	He Taura Kōrero mā te Pouako
<p>Whakatauiratia te whakareatanga 6×8 ki ngā mataono honohono. Tonoa ngā tamariki ki te kimi i tētahi atu whakareatanga e ōrite ana.</p> <p>Whakawhitiwhiti kōrero mō te ōritenga o ia taha o te tohu ōrite</p>	<p>Anei anō tētahi whakareatanga hei whakatauiria ki ngā mataono honohono (6×8).</p> <div style="text-align: center;">  <p style="margin-left: 100px;">6×8</p> </div> <p>E hia katoa ngā mataono honohono? (E 48.)</p> <p>Me pēhea te wāwāhi i ngā mataono honohono hei hanga i tētahi atu whakareatanga? E hia ngā wāwāhitanga rerekē e taea ana?</p> <div style="text-align: center;">  <p style="margin-left: 100px;">3×16</p> </div> <p>E hia katoa ngā mataono honohono i konei? (E 48.)</p> <div style="text-align: center;">  <p style="margin-left: 100px;">12×4</p> </div> <p>E hia katoa ngā mataono honohono i konei? (E 48.)</p> <div style="text-align: center;">  <p style="margin-left: 100px;">24×2</p> </div> <p>E hia katoa ngā mataono honohono i konei? (E 48.)</p>

EA

AA

AM

AP

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
	<p>Tuhia ngā whārite hei whakaatu i te ōritenga o ēnei whakareatanga:</p> $6 \times 8 = 3 \times 16$ $6 \times 8 = 12 \times 4$ $6 \times 8 = 24 \times 2.$ <p>Titiro ki ngā whārite. E rua ngā taha o te tohu ōrite. He whakareatanga kei ia taha o te tohu ōrite. He aha te tikanga o te tohu ōrite? (He ōrite te otinga o ngā whakareatanga kei ia taha o te tohu ōrite.)</p>
<p>Kia pērā anō te mahi mō ngā whakareatanga nei:</p> 4×5 4×8 3×6 5×8	

Te Whakamahi Tikanga Tau

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>E hoki ki te kōrero mō te tikanga o te tohu ōrite. Hoatu he whārite hei whakaoti mā ngā ākongā.</p>	<p>Anei tētahi whārite: $60 \div \square = 20 \div 4$</p> <p>He aha te tikanga o te tohu ōrite i tēnei whārite. (He ōrite te otinga o ia taha o te tohu ōrite.)</p> <p>Nō reira me pēhea te whiriwhiri i te tau e tika ana mō roto i te pouaka? (Me whakaoti tētahi taha, arā, te $20 \div 4$. Ko te 5 te otinga. Koirā hoki te otinga o te taha mauī.)</p> <p>Wehea te 60 ki te aha, ka 5? ($60 \div \square = 5$)</p> <p>He pai te huri hei whakareatanga. Whakareatia te 5 ki te aha ka 60? ($5 \times \square = 60$)</p> <p>(Ko te 12 te tau e tika ana mō roto i te pouaka.)</p>
<p>Hoatu ēnei whārite hei whakaoti mā ngā ākongā:</p> $6 \times 10 = 3 \times \square$ $\square \times 20 = 8 \times 10$ $12 \times 12 = 2 \times \square$ $\square \div 4 = 30 \div 2$ $6 \times \square = 3 \times 40$ $6 \times 10 = 3 \times \square$ $2 \times 4 + 3 = \square + 5$ $2 \times 4 + \square = 11$ $2 \times \square = 11 - 3$ $\square - 3 = 11 + 1$	

He Pātai Aromatawai

He aha ētahi tau e rua hei whakauru atu ki ngā pouaka nei kia tika ai te whārite?

$$35 \div 5 = \square \div \square$$

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

EA

AA **Te Kore**

AM E ako ana ahau i ēnei tikanga e rua o te kore:

- AP
- Ina wehea te 0 ki tētahi tau, ko te 0 anō te otinga.
 - Kāore e taea tētahi tau te wehe ki te 0.

Te Whakamahi Tikanga Tau

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
Tonoa ngā ākonga ki te tuhi i tētahi pakitau mō te wehenga $0 \div 34$, ka whakaoti ai.	Anei tētahi wehenga: $0 \div 34$. He aha tētahi pakitau hei whakaata i tēnei wehenga? Hei tauira: Kārekau ngā rare a Hinewai, ka wehea ki ngā tamariki 34 o tōna kura. He aha te whiwhinga a ia tamaiti? (Nā te mea kārekau ngā rare hei tohatoha atu, kārekau he whiwhinga a ia tamaiti. Anei te whārite: $0 \div 34 = 0$)
Whakawhitiwhiti kōrero mō te take kāore e taea tētahi tau te wehe ki te 0.	34 ngā āporo a Hiraani. Ka hoatu ngā āporo 0 ki ia tangata ka tūpono atu ia. Tokohia ngā tāngata ka whiwhi āporo? He aha te whārite hei whakaata i tēnei rapanga? ($34 \div 0$) He aha te otinga o te rapanga? (He mutunga kore ngā tāngata ka taea e Hiraani te hoatu te kore āporo – ka kore e pau āna āporo 34. Nō reira, ko te mutunga kore te otinga o te wehenga $34 \div 0$. Ka kīia e ngā tohunga pāngarau, e kore e taea tētahi tau te wehe ki te 0.)
Hoatu he rapanga atu anō hei whakaoti mā ngā ākonga: 0×456 $0 \div 89$ 89×0 $0 \div 789\ 093$ 345×567	

He Pātai Aromatawai

Ko te a , te e , te h , me te i hei tohu i ētahi tau e whā i ngā whārite nei.

He aha te otinga o ēnei:

$$a \times e \times 0$$

$$0 \div a$$

$$a \times 0 \div e$$

$$a \times e \times h \div i \times 0$$

EA

AA

AM

AP

Te Raupapa Paheko Tau

E ako ana ahau ki te raupapa tika mō te whakaoti paheko tini.

Rauemi

He tātaiai māmā, he tātaiai pūtaiao, Whārangi Tārua 8–5.

Te Whakamahi Tikanga Tau

Te Mahi a te Pouako	He Taura Kōrero mā te Pouako
<p>Whakaotia te raupapatanga paheko nei i tētahi tātaiai māmā, me tētahi tātaiai pūtaiao.</p> <p>Whakawhitiwhiti kōrero mō te rerekē o te otinga ki ia tātaiai.</p>	<p>E rua ngā momo tātaiai nei. Ko tētahi he tātaiai māmā, ko tētahi he momo tātaiai ka whakamahia e ngā tohunga pāngarau, tohunga pūtaiao hoki.</p> <p>Anei te paheko hei whakaoti ki ngā tātaiai e rua: $8 + 3 \times 6 = \square$</p> <p>He aha te otinga? (Ko te 66 ki te tātaiai māmā, ko te 26 ki te tātaiai pūtaiao.)</p> <p>He aha e rerekē ai te otinga ki ngā tātaiai e rua nei? (Ko tā te tātaiai māmā, he tīmata i te taha mauī, ka haere whakatematau. Arā, ko te $8 + 3$ i te tuatahi, ka 11. Kātahi ka whakareatia tēnā ki te 6, ka 66. Heoi anō, ko tā te tātaiai pūtaiao, he whakaoti i te whakareatanga i te tuatahi, arā, ko te 3×6, ka 18. Kātahi ka tāpirihia te 8, ka 26.)</p> <p>Ko tēhea te otinga tika? (Ko te 26. Koia rā tētahi tikanga pāngarau mō te raupapa o te tātaiatanga. Mēnā kāore he taiapa, ka whakaotia te whakareatanga me te wehenga i mua i te tāpiritanga me te tangohanga.)</p>

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

EA
AA
AM
AP

Te Mahi a te Pouako	He Taura Kōrero mā te Pouako
<p>Tuhia te rapanga nei ki te papa tuhituhi, ka whakaoti ai ki ngā tātaitai e rua.</p> <p>Whakawhitiwhiti kōrero mō te otinga tika, me te wāhi ki ngā taiapa i roto i tētahi raupapatanga paheko.</p>	<p>3.456 manokaramu rīwai ka hokona e Herewini i te Rāhina. Ka hoki anō i te Rātū ki te hoko i te 2.087 manokaramu anō. 91 hēneti te utu mā te manokaramu kotahi. He aha te tapeke o te utu?</p> <p>Anei tētahi whārite hei whakaata i te rapanga nei: $(3.456 + 2.087) \times 0.91 = \\$ \square$</p> <p>Whakaotia ki ngā tātaitai e rua. He aha te tapeke o te utu? (Ki te tātaitai māmā, ko te 5.04413 te otinga. Ki te tātaitai pūtaiao, ko te 5.35517 te otinga.)</p> <p>Kāore e tika ana te otinga o te tātaitai pūtaiao. He aha ai? (I tēnei rapanga, e tika ana kia tāpirihia te taumaha o ngā rīwai i te tuatahi kia mōhiotia ai e hia te tapeke o te taumaha. Kātahi ka whakareatia ki te utu ā-manokaramu.)</p> <p>Nō reira, me pēhea e tohutohu atu ki te tātaitai pūtaiao kia whakaotia te tāpiritanga i te tuatahi, kātahi ko te whakareatanga? (Rohea te tāpiritanga ki ētahi taiapa: $(3.456 + 2.087) \times 0.91$. He tikanga pāngarau anō tēnei. Mēnā he taiapa kei roto i te tātaitanga, me whakaoti tērā i te tuatahi, kātahi ko ngā whakareatanga/wehenga, kātahi ko ngā tāpiritanga/tangohanga.)</p>
<p>Kia pērā anō te mahi me te whakawhitiwhiti kōrero mō te whakaoti i tēnei raupapatanga paheko: $(2 + 3 \times 4) \times 2$</p>	<p>He aha te raupapatanga tika ki te whakaoti i tēnei rapanga? $(2 + 3 \times 4) \times 2$</p> <p>(Whakaotia te whakareatanga i rō taiapa i te tuatahi, ka 12. Kātahi ko te tāpiritanga i rō taiapa, ka 14. Kātahi ko te whakareatanga i waho i ngā taiapa, ka 28.)</p>

EA

AA

AM

AP

Te Mahi a te Pouako	He Taura Kōrero mā te Pouako
<p>Kia pērā anō te mahi me te whakawhitiwhiti kōrero mō te whakaoti i tēnei raupapatanga paheko: $(2 + 6 \div 3) \times 2 - 14 \div 7$</p>	<p>He aha te raupapatanga tika ki te whakaoti i tēnei rapanga? $(2 + 6 \div 3) \times 2 - 14 \div 7$</p> <p>(Whakaotia te wehenga i rō taiapa i te tuatahi, ka 2; kātahi ko te tāpiritanga i rō taiapa, ka 4; kātahi ko te whakareatanga me te wehenga i waho i ngā taiapa, ka $8 - 2$. Ko te 6 te otinga whakamutunga.)</p>
<p>Kia pērā anō te mahi me te whakawhitiwhiti kōrero mō te whakaoti i tēnei raupapatanga paheko: $(44 - 8 \div 2) \div (14 + 3 - 15) \div (4 \div 2 \times 4)$</p>	<p>He aha te raupapatanga tika ki te whakaoti i tēnei rapanga: $(44 - 8 \div 2) \div (14 + 3 - 15) \div (4 \div 2 \times 4)$? (Whakaotia ngā taiapa e toru. Mō te taiapa tuatahi, ko te wehenga, kātahi ko te tangohanga, ka 40. Mō te taiapa tuarua, ka tīmata i te taha mauī, ka haere whakatematau, ko te 2 te otinga. Kia pērā anō hoki mō te taiapa tuatoru arā, ka tīmata i te taha mauī, ka haere whakatematau, ko te 8 te otinga. Ko te mahi whakamutunga he tīmata anō i te taha mauī ka haere whakatematau. Arā, $40 \div 2 + 8$, ka 28.)</p> <div style="text-align: center;"> $(44 - 8 \div 2) \div (14 + 3 - 15) + (4 \div 2 \times 4)$ </div>
<p>Hoatu te Whārangi Tārua 8–5 hei whakaū i ēnei tikanga mō te raupapa tika i ētahi paheko tini.</p>	

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

EA

AA **Te Whakarea ki te 25**

AM

E ako ana ahau i tētahi rautaki māmā ki te whakarea i tētahi tau ki te 25.

AP

Rauemi

He rauemi uara tū, he moni tākaro.

Te Whakamahi Rauemi

Te Mahi a te Pouako	He Taurira Kōrero mā te Pouako
<p>Tuhia te rapanga ki te papa tuhituhi, ka pānui ai.</p> <p>Whakawhitiwhiti kōrero mō te rautaki māmā mō te whakarea ki te 25.</p>	<p>Anei te rapanga hei tiroiro i tēnei wā:</p> <p>Ka kohia mai e Hariata te \$25 mai i ōna hoa tokoiwa hei hoko tikitiki mō te poitarawhiti. E hia katoa ngā moni?</p> <p>He aha te whārite hei whakaatu i te rapanga nei?</p> $25 \times 9 = \square$ <p>Hangaia kia iwa ngā 25.</p> <p>Rohea kia whā ngā 25. E hia tēnā? (\$100.)</p> <p>Nō reira, e hia tāra te katoa o ngā 25? (E whā ngā 25, ka 100. E waru ngā 25, ka 200. Kotahi atu anō te 25, ka \$225.)</p>
<p>Kia pērā anō te mahi me te whakawhitiwhiti kōrero mō ētahi atu rapanga. Tonoa mā ngā ākonga e tuhi he pakitau.</p> <p> $25 \times 7 = \square$ $25 \times 5 = \square$ $25 \times 12 = \square$ $25 \times 14 = \square$ </p>	

EA

AA

AM

AP

Te Whakaahua ā-Hinengaro

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Tuhia te rapanga ki te papa tuhituhi, ka pānui ai.</p> <p>Whakawhitiwhiti kōrero mō te rautaki māmā mō te whakarea ki te 25.</p>	<p>Ka kohia mai e Taumutu te \$25 mai i ōna hoa tekau mā tahi hei hoko tīkiti mō te poitarawhiti. E hia katoa ngā moni?</p> <p>He aha te whārite hei whakaata i te rapanga nei? $25 \times 11 = \square$</p> <p>Kāore koutou e kite i taku mahi i mua i te ārai nei, engari me āta whakaaro i roto i ō koutou hinengaro. Kei te whakarōpū au i ngā 25 tāra.</p> <p>He aha au i whakarōpū ai kia whā ngā 25 ki ia rōpū? (Nā te mea ko te \$100 tēnā. He tau māmā te 100.)</p> <p>E hia katoa ngā rōpū? (E rua ngā rōpū o te 4.)</p> <p>He \$25 atu anō e toe mai ana? (Āe, e toru atu anō ngā 25 tāra.)</p> <p>E hia katoa ngā moni? (E rua ngā rōpū o te 4, ka \$200 tērā. E toru atu anō ngā 25 tāra, ko te 75 tāra tērā. Nō reira, ko te \$275 te katoa o te moni i kohia e Taumutu.)</p>
<p>Kia pērā anō te mahi me te whakawhitiwhiti kōrero mō ētahi atu rapanga. Tonoa mā ngā ākongā e tuhi he pakitau.</p> <p> $25 \times 21 = \square$ $25 \times 24 = \square$ $25 \times 16 = \square$ $25 \times 15 = \square$ $25 \times 13 = \square$ </p>	

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

EA		
AA	Te Whakamahi Tikanga Tau	
AM	Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
AP		
	<p>Tuhia te rapanga ki te papa tuhituhi ka pānui ai.</p> <p>Whakawhitiwhiti kōrero mō te rautaki māmā mō te whakarea ki te 25.</p>	<p>Ka kohia mai e Taumutu te \$25 mai i ōna hoa toru tekau mā rima, hei hoko tikiti mō te poitarawhiti. E hia katoa ngā moni?</p> <p>He aha te whārite hei whakaata i te rapanga nei? $25 \times 35 = \square$</p> <p>E whā ngā 25, ka hia? (Ka 100.)</p> <p>E hia ngā whā kei roto i te 35? (E 8.)</p> <p>He aha te mahi i nāianei? (E waru ngā rōpū o te whā, ka \$800 tēnā. E toru atu anō ngā 25 e toe mai ana, ko te \$75 tēnā. Hui katoa ko te \$875 te moni i kohia e Taumutu.)</p>
	<p>Hoatu ētahi atu rapanga pēnei hei whakaoti mā ngā ākongā:</p> <p>$25 \times 40 = \square$ $25 \times 25 = \square$ $25 \times 43 = \square$ $25 \times 80 = \square$ $25 \times 62 = \square$</p>	

Te Pātai Aromatawai

Whakamāramatia mai te rautaki hei whakaoti i te whakareatanga nei: $25 \times 38 = \square$

EA

AA

AM

AP

Te Whakatau Tata i ngā Hautau

E ako ana ahau ki te whakatau tata i te rahi o tētahi hautau, me te otinga o te tāpiritanga me te tangohanga hautau.

Rauemi

He porowhita whakaatu hautau, Whārangi Tārua 8–7.

Te Whakamahi Rauemi

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Tonoa ngā ākongā ki te whakaatu i te $\frac{4}{9}$ ki ngā porowhita whakaatu hautau.</p> <p>Whakawhitiwhiti kōrero mō te tika, te hē rānei o ngā whakaaturanga.</p>	<p>Whakamahia ngā porowhita nei ki te whakaatu mai i te whā huiwa ($\frac{4}{9}$).</p> <div style="text-align: center;"> </div> <p>He aha tātou e mōhio ai e tino pātata ana te hautau ki te whā huiwa ($\frac{4}{9}$)? (He paku iti iho i te haurua. Mēnā ka wehea te porowhita kia iwa ngā wāhanga ōrite, ko te 4.5 o aua wāhanga he rite ki te haurua. Arā, $\frac{4.5}{9}$. He paku iti iho te $\frac{4}{9}$.)</p> <p>Mēnā ko te whā huiwa tēnei wāhanga o te porowhita, he aha te hautau o tērā atu wāhanga? (Ko te rima huiwa [$\frac{5}{9}$], nā te mea e iwa huiwa [$\frac{9}{9}$] kei roto i te katoa o te porowhita.)</p>
<p>Kia pērā anō ngā mahi mō ētahi atu hautanga.</p>	<p>Whakaaturia mai ēnei hautanga ki ngā porowhita. He aha te hautanga tuarua e whakaaturia ana (tērā atu o ngā tae)?</p> <p style="text-align: center;"> $\frac{3}{7}$ $\frac{4}{5}$ $\frac{5}{11}$ $\frac{11}{21}$ $\frac{5}{9}$ </p>

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

EA
AA
AM
AP

Te Whakaahua ā-Hinengaro

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Tuhia tētahi hautau ki te papa tuhituhi. Tonoa ngā tamariki ki te āta whakaaro i roto i ō rātou hinengaro te rahi o taua hautau ki ngā porowhita, ka whakawhitiwhiti kōrero ai.</p>	<p>Koia nei te hautau kua hangaia e au ki ngā porowhita. Kāore koutou e kite mai ana.</p> $\frac{15}{31}$ <p>Āta whakaarohia te hautau. Whakamāramatia mai tōna āhua. (He paku te iti iho i te haurua, nā te mea he paku te iti iho te 15 i te haurua o te 31.)</p> <p>He aha te hautau e whakaaturia ana ki te wāhanga tuarua o te porowhita? (Ko te $\frac{16}{31}$.)</p> <p>He aha ai? (Nā te mea e 31 ngā hau toru-tekau-mā-tahi [$\frac{31}{31}$] i roto i te kotahi.)</p>
<p>Kia pērā anō ngā mahi me te whakawhitiwhiti kōrero mō ētahi atu hautau.</p> $\frac{5}{11} \quad \frac{2}{5} \quad \frac{4}{7} \quad \frac{8}{17} \quad \frac{6}{14} \quad \frac{19}{20}$	

Te Whakamahi Tikanga Tau

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Tuhia te rapanga ki te papa tuhituhi, ka pānui ai. Whakawhitiwhiti kōrero mō te whakatau tata i te otinga.</p>	<p>Ka kainga e Mātene te $\frac{2}{5}$ o tētahi parehe, ka kainga e Horowai te $\frac{3}{7}$ o tētahi. He nui ake i te kotahi parehe, he iti iho rānei i te kotahi te tapeke o ngā wāhanga parehe e rua nei?</p> <p>(He iti iho i te haurua te $\frac{2}{5}$ me te $\frac{3}{7}$. Nō reira, he iti iho i te kotahi te tapeke o ngā hautau e rua nei.)</p>
<p>Hoatu ētahi atu rapanga hautau hei whakaoti mā ngā ākongā.</p>	<p>He nui ake, he iti iho rānei i te kotahi ēnei tāpiritanga hautau?</p> $\frac{2}{5} + \frac{12}{23} \quad \frac{17}{33} + \frac{6}{11} \quad \frac{51}{100} + \frac{6}{12}$ $\frac{24}{48} + \frac{29}{60} \quad \frac{24}{47} + \frac{61}{120}$

EA

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AM

AP

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Kia pērā anō te whakatau tata i te otinga o ngā rapanga pēnei.</p>	<p>He iti iho i te haurua, he nui ake rānei te otinga o te $1 - \frac{21}{43}$?</p> <p>He iti iho i te hauwhā, he nui ake rānei te $\frac{11}{45}$?</p> <p>He iti iho i te haurua, he nui ake rānei te otinga o te $\frac{3}{4} - \frac{11}{40}$?</p> <p>He iti iho i te kotahi, he nui ake rānei te otinga o te $\frac{3}{4} + \frac{15}{62}$?</p>

He Pātai Aromatawai

Tuhia ētahi hautau e rua. Kia nui ake i te 30 te tauraro o ēnei hautau. Kia paku iti iho i te kotahi te tapeke o ēnei hautau.

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

EA

AA **Te Hautau Ōrite**

AM


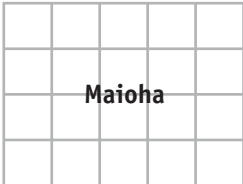

E ako ana ahau ki te kimi hautau ōrite.

AP

Rauemi

He whārangi tukutuku (e 2 mitarau mā te 2 mitarau te rahi o ngā tukutuku), Whārangi Tārua 8–8, Whārangi Tārua 8–9.

Te Whakamahi Rauemi

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Tuhia te rapanga ki te papa tuhituhi, ka pānui ai.</p> <p>Whakatauiratia te rapanga ki te whārangi tukutuku.</p>	<p>E rua ngā keke, he tapawhā hāngai te āhua. Kei a Hakopa tētahi, kei a Maioha tērā atu. Ka tapahia e Hakopa tāna keke kia whā ngā wāhanga ōrite, ka kainga te $\frac{3}{4}$. Ka tapahia e Maioha tana keke kia rima ngā wāhanga ōrite. Ka kainga te $\frac{4}{5}$. Ko tēhea te keke kua kainga te wāhanga nui rawa atu?</p> <p>Tuhia kia rua ngā tapawhā hāngai ki te pepa tukutuku hei tohu i ngā keke e rua. Kia 4 mitarau mā te 5 mitarau te rahi.</p> <div style="display: flex; justify-content: space-around; align-items: center;"><div style="text-align: center;"><p>Hākopa</p></div><div style="text-align: center;"><p>Maioha</p></div></div> <p>Tuhia he rārangi huapae ki te keke a Hakopa hei whakaatu i ngā wehenga e whā. Kaurukutia te toru hauwhā i kainga.</p> <div style="text-align: center;"><p>Hākopa</p></div>

EA

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AP


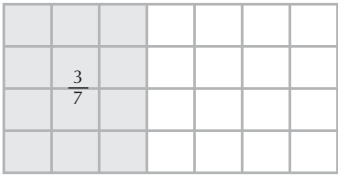
Te Mahi a te Pouako	He Taura Kōrero mā te Pouako						
	<p>Tuhia he rārangi poutū ki te keke a Maioha hei whakaatu i ngā wehenga e rima. Kaurukutia te whā haurima i kainga.</p> <div style="text-align: center;"> </div> <p>Titiro ki ngā wāhanga kauruku o ia keke. He aha tātou e mōhio ai ko tēhea te wāhanga nui rawa? (E 20 ngā wehenga iti o ia keke. I te keke a Hākopa, kua kaurukutia ngā wehenga 15. I te keke a Maioha, kua kaurukutia ngā wehenga 16. Nō reira he mārama te kite atu, he nui ake te wāhanga i kainga e Maioha.)</p> <table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th>Hākopa</th> <th>Maioha</th> </tr> </thead> <tbody> <tr> <td>$\frac{3}{4} = \frac{15}{20}$</td> <td>$\frac{4}{5} = \frac{16}{20}$</td> </tr> <tr> <td> </td> <td> </td> </tr> </tbody> </table>	Hākopa	Maioha	$\frac{3}{4} = \frac{15}{20}$	$\frac{4}{5} = \frac{16}{20}$		
Hākopa	Maioha						
$\frac{3}{4} = \frac{15}{20}$	$\frac{4}{5} = \frac{16}{20}$						
<p>Kia pērā anō te mahi mō ētahi atu rapanga. Me āta whakaaro te rahi o te tapawhā hāngai e tika ana.</p>	<p>He nui ake, he iti iho rānei te $\frac{3}{4}$ i te $\frac{2}{3}$? Kia 3 mā te 4 te tukutuku.</p> <p>He nui ake, he iti iho rānei te $\frac{4}{5}$ i te $\frac{5}{6}$? Kia 5 mā te 6 te tukutuku.</p> <p>He nui ake, he iti iho rānei te $\frac{1}{3}$ i te $\frac{3}{7}$? He nui ake, he iti iho rānei te $\frac{5}{6}$ i te $\frac{6}{7}$?</p>						

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

EA
AA
AM
AP

Te Whakaahua ā-Hinengaro

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Tuhia te rapanga ki te papa tuhituhi, ka pānui ai.</p> <p>Whakawhitiwhiti kōrero mō te whakawehe i tētahi tapawhā hāngai kia kitea ai ngā hautau ōrite nei:</p> $\frac{3}{7} = \frac{12}{28}$ <p>Whakaaturia te pikitia mēnā he uaua ki ngā ākongā te kite ā-hinengaro i te toru hauwhitu.</p>	<p>E hia ngā hau rua-tekau-mā-waru e ōrite ana ki te toru hauwhitu? $\frac{3}{7} = \frac{\square}{28}$</p> <p>Āta whakaarohia tētahi tapawhā hāngai. Ka tuhia ētahi rārangi poutū kia whitu ngā wāhanga ōrite. Ka kaurukutia e toru o aua wāhanga hei whakaatu i te toru hauwhitu.</p>  <p>I nāianeī, ka tuhia ētahi rārangi huapae hei whakawehe i te tapawhā hāngai kia 28 ngā wehenga. E hia ngā rārangi huapae kia 28 ngā wehenga? (Kia toru ngā rārangi, hei hanga i ngā wāhanga huapae e whā. E 28 katoa ngā wehenga itī, nā te mea e 7 whakareatia ki te 4, ka 28.)</p> <p>Whakaaturia te pikitia mēnā he uaua ki ngā ākongā te kite ā-hinengaro i ngā wehenga 28.</p>  <p>Āta whakaarohia te wāhanga kauruku, te toru hauwhitu. E hia ngā hau rua-tekau-mā-waru kei roto i taua toru hauwhitu? (Tekau mā rua, nā te mea e toru ngā wāhanga poutū, e whā ngā wāhanga huapae. Whakareatia te 3 ki te 4, ka 12.)</p> <p>E hia ngā hau rua-tekau-mā-waru e ōrite ana ki te toru hauwhitu? $\frac{3}{7} = \frac{12}{28}$</p>
<p>Kia pērā anō te mahi hei kimi i ngā hautau ōrite nei:</p> $\frac{3}{4} = \frac{\square}{16} \qquad \frac{2}{3} = \frac{\square}{15} \qquad \frac{5}{6} = \frac{\square}{18} \qquad \frac{3}{10} = \frac{\square}{20} \qquad \frac{7}{9} = \frac{\square}{27}$	

EA

AA

AM

AP

Te Whakamahi Tikanga Tau

Te Mahi a te Pouako	He Taura Kōrero mā te Pouako
<p>Tuhia ngā hautau ōrite ki te papa tuhituhi, ka whakawhitiwhiti kōrero ai mō te tikanga tau e kitea mai ana.</p>	<p>Titiro ki ngā hautau ōrite nei kua oti i a tātou te whiriwhiri.</p> $\frac{4}{5} = \frac{16}{20} \quad \frac{3}{4} = \frac{15}{20} \quad \frac{3}{4} = \frac{9}{12} \quad \frac{2}{3} = \frac{8}{12}$ $\frac{4}{5} = \frac{24}{30} \quad \frac{5}{6} = \frac{25}{30} \quad \frac{6}{7} = \frac{36}{42} \quad \frac{5}{6} = \frac{35}{42}$ <p>He aha te taura e kitea mai ana i roto i ngā hautau ōrite? (Mēnā ka whakareatia te taurunga me te tauraro ki te tau ōrite, ka hua mai tētahi hautau ōrite. Mō te taura tuatahi:</p> $\frac{4 \times 4}{5 \times 4} = \frac{16}{20}$
<p>Hoatu te Whārangi Tārua 8–9 hei whakaoti mā ngā ākonga, hei whakaū i tēnei tikanga mō te kimi hautau ōrite.</p>	

He Pātai Aromatawai

1. Tuhia tētahi hautau e ōrite ana ki te $\frac{4}{5}$, kia nui ake i te 99 te tauraro.
2. Tuhia kia whā ngā hautau e ōrite ana ki te $\frac{4}{3}$.

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

EA

AA **He Hautau Nui Ake i te Kotahi**

AM

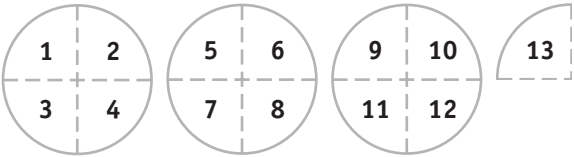
E ako ana ahau ki te huri tau hanumi hei hautau noa, ki te huri hautau noa hei tau hanumi.

AP

Rauemi

He wehenga poraka hautau.

Te Whakamahi Rauemi

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Tuhia te rapanga ki te papa tuhituhi, ka pānui ai.</p> <p>Whakatauiratia te rapanga ki ngā wehenga hautau, ka whakawhitiwhiti kōrero ai mō te huri i te hautau $\frac{13}{4}$ hei tau hanumi.</p>	<p>Kei te hoko parehe a Kui Maraea hei whāngai i āna mokopuna 13. Ka tapahia ia parehe kia 4 ngā wehenga ōrite, ka hoatu tētahi wehenga ki ia mokopuna. E hia katoa ngā parehe ka pau i āna mokopuna?</p> <p>Ko tēhea te wehenga hautau hei whakaata i tētahi tapahanga parehe? (Ko te hauwhā.)</p> <p>Whakaritea ngā hauwhā 13. E hia katoa ngā parehe? (12 ngā hauwhā, ka toru ngā parehe. Kotahi hauwhā e toe mai ana.)</p> <p>Nō reira, he ōrite te $\frac{13}{4}$ ki te aha? (Ki te 3 me te $\frac{1}{4}$. Arā, $\frac{13}{4} = 3\frac{1}{4}$. Nō reira, ka kainga te toru me te hauwhā parehe e ngā mokopuna a Kui Maraea.)</p> <div style="text-align: center;">  </div> <p>Ka kīia he tau hanumi te toru me te hauwhā ($3\frac{1}{4}$), nā te mea he tauoti tētahi wāhanga o te tau, he hautau tētahi wāhanga.</p>
<p>Kia pērā anō ngā mahi hei huri i ēnei hautau hei tau hanumi:</p> <p style="text-align: center;"> $\frac{15}{4}$ $\frac{11}{3}$ $\frac{12}{4}$ $\frac{17}{6}$ $\frac{19}{3}$ $\frac{24}{4}$ </p>	

EA

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AM

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Te Whakaahua ā-Hinengaro

Te Mahi a te Pouako	He Taura Kōrero mā te Pouako
Tuhia te rapanga ki te papa tuhituhi, ka pānui ai.	19 ngā wehenga parehe, he haurima ia wehenga o te parehe kotahi. E hia katoa ngā parehe?
Tuhia te hautau ki te papa tuhituhi.	E hia katoa ngā haurima? (19)
Tuhia haerehia ngā whārite ki te papa tuhituhi.	Nō reira he aha te hautau hei whakaatu i ngā wehenga parehe katoa? (Ko te 19 haurima [$\frac{19}{5}$].)
	E hia ngā haurima kei te parehe kotahi? (E rima.) ($\frac{5}{5} = 1$)
	Āta whakaarohia, e hia ngā 5 haurima kei roto i te 19 haurima. (E 3 ngā 5 haurima, ka 15 haurima.) ($\frac{5}{5} + \frac{5}{5} + \frac{5}{5} = \frac{15}{5}$) ($3 \times \frac{5}{5} = \frac{15}{5}$)
	E hia ngā haurima e toe mai ana? (E 4.) ($\frac{5}{5} + \frac{5}{5} + \frac{5}{5} \rightarrow \frac{15}{5} + \frac{4}{5} = \frac{19}{5}$)
	Nō reira e hia katoa ngā parehe? (E 3 me te 4 haurima, $\frac{19}{5} = 3 \frac{4}{5}$.)
Kia pērā anō ngā mahi hei huri i ēnei hautau hei tau hanumi:	
$\frac{15}{7}$ $\frac{11}{6}$ $\frac{30}{6}$ $\frac{27}{10}$ $\frac{19}{4}$ $\frac{24}{7}$	

Te Whakamahi Tikanga Tau

Te Mahi a te Pouako	He Taura Kōrero mā te Pouako
Hoki anō ki te tiro tiro i ētahi o ngā huringa hautau hei tau hanumi kua oti kē i runga nei.	Āta tirohia ēnei hautau kua oti kē i a tātou te huri hei tau hanumi:
Whakawhitiwhiti kōrero mō te tikanga/taura e kitea mai ana.	$\frac{15}{4} = 3 \frac{3}{4}$ $\frac{11}{3} = 3 \frac{2}{3}$ $\frac{17}{6} = 2 \frac{5}{6}$ $\frac{27}{10} = 2 \frac{7}{10}$
	He aha te tikanga e kitea mai ana? (Ka wehea te taurunga ki te tauraro. Arā, 15 wehea ki te 4, ka 3 me te toru hauwhā e toe mai ana.)
	Koirā hoki tētahi tikanga o te tohu hautau “—”, ko te whakawehe.

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

EA
AA
AM
AP

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Tuhia te rapanga ki te papa tuhituhi, ka pānui ai.</p> <p>Whakawhitiwhiti kōrero mō te huri i tētahi tau hanumi hei hautau noa.</p>	<p>E hia katoa ngā hautoru kei roto i te rua me te rua hautoru ($2\frac{2}{3}$)?</p> <p>E hia ngā hautoru i te kotahi? (E 3.)</p> <p>Nō reira, e hia ngā hautoru i te rua me te rua hautoru? (E ono ngā hautoru i te rua, me te rua hautoru atu anō, ka waru hautoru: $2\frac{2}{3} = \frac{8}{3}$.)</p>
<p>Kia pērā anō ngā mahi hei huri i ēnei tau hanumi hei hautau noa:</p> <p>$3\frac{1}{10}$ $7\frac{2}{3}$ $1\frac{23}{24}$ $12\frac{2}{5}$ $6\frac{7}{8}$ $3\frac{5}{12}$</p>	

He Pātai Aromatawai

1. Me pēhea te huri i te hautau nei hei tau hanumi?

$$\frac{209}{5}$$

(Wehea te 209 ki te 5 – koirā te wāhanga tauoti o te tau hanumi [41]. Ko te toenga hei taurunga mō te wāhanga hautau o te tau hanumi, $\frac{4}{5}$. Nō reira, $\frac{209}{5} = 41\frac{4}{5}$.)

2. Me pēhea te huri i tau hanumi nei hei hautau noa?

$$120\frac{4}{5}$$

(Whakareatia te tauraro ki te tauoti – koirā te maha o ngā haurima i roto i te 120, arā, ka 600. Tāpirihia wāhanga hautau o te tau hanumi, te $\frac{4}{5}$, ka 604 haurima, $\frac{604}{5}$.)

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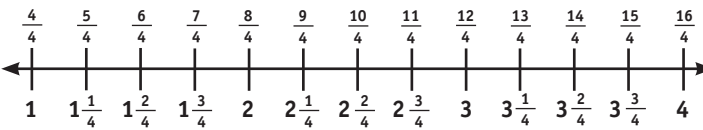
He Rārangi Hautau

E ako ana ahau ki te whakaatu i te tau hanumi me te hautau noa ki te rārangi tau matarua.

Rauemi

He rārangi tau matarua wātea, Whārangi Tārua 8–10.

Te Whakamahi Rauemi

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Tuhia te rapanga ki te papa tuhituhi, ka pānui ai.</p> <p>Whakaaturia ngā tauoti me ngā hautau noa ki tētahi rārangi tau matarua.</p>	<p>Kei waenganui tēnei hautau i te 2 me te 4: $\frac{a}{4}$.</p> <p>He aha ngā taurunga e taea ana hei whakakapi i te a?</p> <p>He rārangi tau matarua tēnei. Kei raro ko ngā tau hanumi. Kei runga ko ngā hautau noa, arā, ngā hauwhā.</p>  <p>Nō reira, koinei ngā hauwhā kei waenganui i te 2 me te 4: $\frac{9}{4}, \frac{10}{4}, \frac{11}{4}, \frac{12}{4}, \frac{13}{4}, \frac{14}{4}, \frac{15}{4}$</p>
<p>Kia pērā anō te tuhi rārangi tau matarua hei whakaoti i ēnei rapanga.</p>	<p>Kei waenganui tēnei hautau i te 3 me te 5: $\frac{a}{3}$.</p> <p>He aha ngā taurunga e taea ana hei whakakapi i te a?</p> <p>Kei waenganui tēnei hautau i te 6 me te 9: $\frac{a}{2}$.</p> <p>He aha ngā taurunga e taea ana hei whakakapi i te a?</p>

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

EA
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AP

Te Whakaahua ā-Hinengaro

Te Mahi a te Pouako	He Taurira Kōrero mā te Pouako
<p>Tuhia te rapanga ki te papa tuhituhi, ka pānui ai.</p> <p>Tonoa ngā tamariki ki te āta whakaaro i te rārangi tau matarua hei whakaatu i ngā tau hanumi me ngā hautau e hāngai ana.</p>	<p>Kei waenganui te hautau $\frac{a}{5}$ i te $3\frac{2}{5}$ me te $3\frac{4}{5}$. He aha te taurunga e taea ana hei whakakapi i te a?</p> <p>Āta whakaarohia te rārangi tau matarua. Ka tuhia ngā tau hanumi $3\frac{2}{5}$ me $3\frac{4}{5}$ ki te mata raro. He aha kei waenganui i ēnei tau e rua? (Ko te $3\frac{3}{5}$.)</p> <p>He aha te hautau e ōrite ana ki te $3\frac{3}{5}$? (Ko te $\frac{18}{5}$. E toru ngā rima haurima me te toru haurima atu anō.)</p>
<p>Kia pērā anō te ārahi i ngā ākonga ki te āta whakaaro i te rārangi tau matarua e hāngai ana hei whakaoti i ēnei rapanga:</p>	<p>Kei waenganui te hautau $\frac{a}{5}$ i te $\frac{1}{5}$ me te $\frac{3}{5}$. He aha te taurunga e taea ana hei whakakapi i te a?</p> <p>Kei waenganui te hautau $\frac{a}{7}$ i te $1\frac{4}{7}$ me te $1\frac{6}{7}$. He aha te taurunga e taea ana hei whakakapi i te a?</p> <p>Kei waenganui te hautau $\frac{a}{4}$ i te $\frac{1}{4}$ me te $\frac{3}{4}$. He aha te taurunga e taea ana hei whakakapi i te a?</p>

Te Whakamahi Tikanga Tau

Whiriwhiria te/ngā taurunga e taea ana hei whakakapi i te e i ēnei rapanga:

1. Kei waenganui te hautau $\frac{e}{5}$ i te $3\frac{2}{5}$ me te 4.
2. Kei waenganui te hautau $\frac{e}{8}$ i te 8 me te $8\frac{2}{3}$.
3. Kei waenganui te tau hanumi $3\frac{e}{6}$ i te $\frac{20}{6}$ me te $\frac{22}{6}$.
4. Kei waenganui te tau hanumi $3\frac{e}{6}$ i te $\frac{21}{6}$ me te $\frac{23}{6}$.

EA

AA

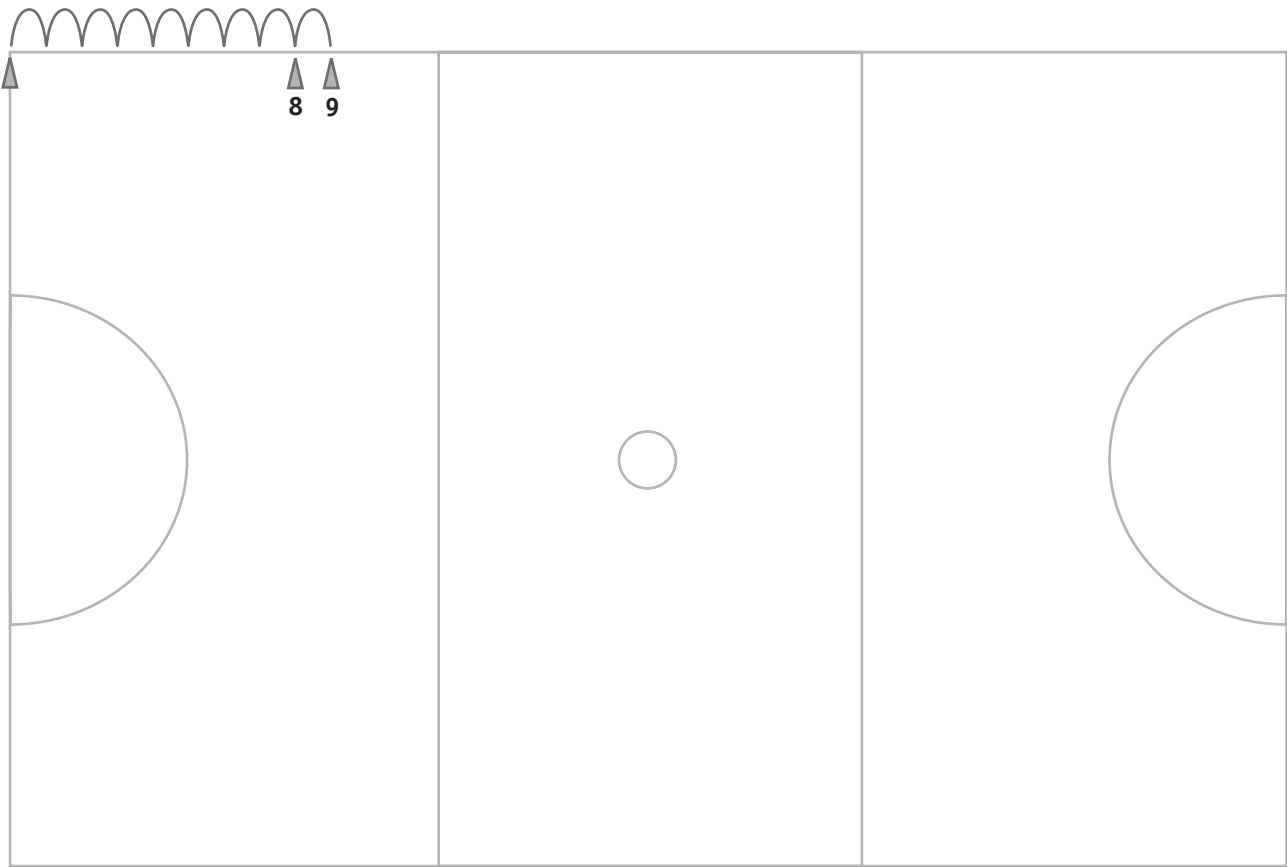
AM

AP

Te Āwhata Rārangi Tau

E ako ana ahau i ngā tikanga o ngā āwhata rerekē o tētahi rārangi tau.

Te Whakamahi Rauemi

Te Mahi a te Pouako	He Taura Kōrero mā te Pouako
<p>Whakatūria ētahi tohu koeko e rua ki runga i te paetaha o te papa poitarawhiti, kia kotahi te whetoko ki waenganui.</p> <p>Whakaaturia he tau ki ngā koeko e rua, ka tono ai i ngā ākonga ki te whiriwhiri i te wāhi noho o te kore.</p>	<p>Kei te hanga au i tētahi rārangi tau ki te paetaha o te papa poitarawhiti. E rua ngā koeko. Ko tētahi hei tohu i te 8, ko tētahi hei tohu i te 9. Kotahi te whetoko ki waenganui.</p> <p>Ko hea te wāhi noho o te kore? (Kia waru ngā whetoko whakamuri [ki te taha mauī] mai i te 8, nā te mea he ōrite ia whetoko ki te 1.)</p>
	

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

EA	Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
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AP	<p>Kia pērā anō te mahi mō ngā rapanga nei.</p>	<p>Ko tētahi koeko hei tohu i te 3.4, ko tētahi hei tohu i te 3.5. Kotahi te whetoko ki waenganui. Ko hea te wāhi noho o te kore? (Kia 34 ngā whetoko whakamuri [ki te taha mauī] mai i te 3.4, nā te mea he ōrite ia whetoko ki te 0.1.)</p> <p>Ko tētahi koeko hei tohu i te 2.2, ko tētahi hei tohu i te 2.3. Kotahi te whetoko ki waenganui. Ko hea te wāhi noho o te kore? (Kia 22 ngā whetoko whakamuri [ki te taha mauī] mai i te 2.2, nā te mea he ōrite ia whetoko ki te 0.1.)</p> <p>Ko tētahi koeko hei tohu i te 0.45, ko tētahi hei tohu i te 0.46. Kotahi te whetoko ki waenganui. Ko hea te wāhi noho o te kore? (Kia 45 ngā whetoko whakamuri [ki te taha mauī] mai i te 0.45, nā te mea he ōrite ia whetoko ki te 0.01.)</p> <p>Ko tētahi koeko hei tohu i te 0.023, ko tētahi hei tohu i te 0.024. Kotahi te whetoko ki waenganui. Ko hea te wāhi noho o te kore? (Kia 23 ngā whetoko whakamuri [ki te taha mauī] mai i te 0.023, nā te mea he ōrite ia whetoko ki te 0.001.)</p> <p>Ko tētahi koeko hei tohu i te 150, ko tētahi hei tohu i te 160. Kotahi te whetoko ki waenganui. Ko hea te wāhi noho o te kore? (Kia 15 ngā whetoko whakamuri [ki te taha mauī] mai i te 150, nā te mea he ōrite ia whetoko ki te 10.)</p> <p>Ko tētahi koeko hei tohu i te 3 300, ko tētahi hei tohu i te 3 400. Kotahi te whetoko ki waenganui. Ko hea te wāhi noho o te kore? (Kia 33 ngā whetoko whakamuri [ki te taha mauī] mai i te 3 300, nā te mea he ōrite ia whetoko ki te 100.)</p>

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Te Whakamahi Tikanga Tau

Te Mahi a te Pouako	He Taura Kōrero mā te Pouako
<p>Tuhia te rapanga ki te papa tuhituhi, ka pānui ai.</p> <p>Ārahina ngā ākongā ki te whakaoti i te rapanga.</p>	<p>Kotahi mitarau te tawhiti mai i te 2.2 ki te 2.3 i tētahi rārangi tau. E hia te tawhiti mai i te 2.2 ki te 0?</p> <p>He aha ngā wehenga o tēnei rārangi tau? (Ko ia wehenga he 0.1, kotahi mitarau te tāwhitiwhiti.)</p> <p>E hia katoa ngā wehenga mai i te 2.2 ki te 0? (E 22.)</p> <p>Nō reira, e hia te tawhiti mai i te 2.2 ki te 0? (E 22 mitarau, nā te mea kotahi mitarau te tawhiti o ia wehenga.)</p>
<p>Kia pērā anō te ārahi i ngā ākongā kia taunga rā anō ki tēnei mahi, kātahi ka tukuna ki te mahi takitahi, takirua rānei.</p>	<p>Tekau mitarau te tawhiti mai i te 2.02 ki te 2.03 i tētahi rārangi tau. E hia te tawhiti mai i te 2.02 ki te 0? (He 0.01 ia wehenga o te rārangi tau, 10 mitarau te tāwhitiwhiti. E 202 ngā wehenga o te rārangi tau mai i te 2.02 ki te 0, nō reira $202 \times 10 \text{ cm} = 2020 \text{ cm} = 20.2 \text{ m}$ te tawhiti.)</p> <p>Kotahi mita te tawhiti mai i te 67.5 ki te 67.6 i tētahi rārangi tau. E hia te tawhiti mai i te 67.5 ki te 0? (He 0.1 ia wehenga o te rārangi tau, 1 mita te tāwhitiwhiti. E 675 ngā wehenga o te rārangi tau mai i te 67.5 ki te 0, nō reira 675 mita te tawhiti.)</p> <p>Tekau mitarau te tawhiti mai i te 907.05 ki te 907.06 i tētahi rārangi tau. E hia te tawhiti mai i te 907.05 ki te 0? (He 0.01 ia wehenga o te rārangi tau, 10 mitarau te tāwhitiwhiti. E 90 705 ngā wehenga o te rārangi tau mai i te 907.05 ki te 0, nō reira $90\,705 \times 10 \text{ cm} = 907\,050 \text{ cm} = 9\,070.5 \text{ m}$ te tawhiti.)</p>

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

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AA **Te Whakaawhiwhi Tauoti**

AM

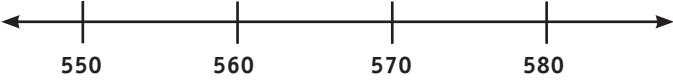
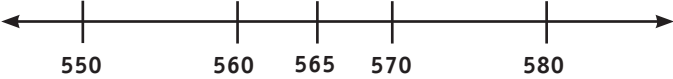
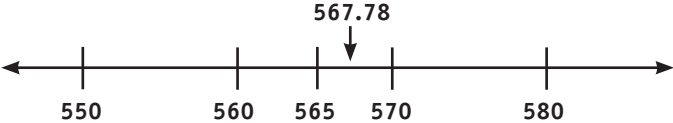
E ako ana ahau ki te whakaawhiwhi tau ki te 1, te 10, te 100, me te 1 000 e pātata ana.

AP

Rauemi

He rārangi tau, Whārangi Tārua 8–11.

Te Whakamahi Rauemi

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Tuhia te rapanga ki te papa tuhituhi, ka pānui ai.</p> <p>Whakawhitiwhiti kōrero mō te mahi whakaawhiwhi tau.</p> <p>Whakaaturia te whakaawhiwhinga ki te rārangi tau.</p>	<p>He tikanga tā te Toa Pouaka Whakaata o Wiremu ki te whakapiki, ki te whakaheke rānei i te utu o ngā pouaka whakaata ki te \$10 e pātata ana. Ko te \$567.78 te utu tika tonu mā tētahi pouaka whakaata. He aha te utu hoko?</p> <p>He aha ngā tekau tāra ki ia taha o te \$567.78? (Ko te \$560 me te \$570.)</p> <p>Tuhia he rārangi tau, ka whakaatu ai i te \$550, te \$560, te \$570 me te \$580.</p>  <p>E hia tāra kei waenganui pū i te \$560 me te \$570? (Ko te \$565.)</p>  <p>Ko hea te wāhi noho o te \$567.78 ki tēnei rārangi tau? (Ki waenganui i te \$565 me te \$570.)</p>  <p>Titiro ki te wāhi e noho ana te \$567.78 i te rārangi tau. Ko tēhea te tekau tāra e pātata ana? (E pātata ana ki te \$570.)</p>

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

EA

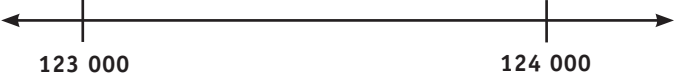
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Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
Whakamāramatia te tikanga o te mahi whakaawhiwhi.	Ko te ingoa o tēnei mahi, ko te whakaawhiwhi, arā, ko te kimi i tētahi tau māmā e pātata ana. Ko te mahi nui, he āta whiriwhiri mēnā ka kawea te tau ki te tau māmā ki runga, ki te tau māmā ki raro rānei. He pātata atu te \$567.78 ki te \$570, tērā i te \$560. Nō reira, e tika ana kia kawea ki runga.
Kia pērā anō te tuhi pakitau me te whakaawhiwhi i ēnei rapanga.	Whakaawhiwhia te \$456.89 ki te \$10 e pātata ana. Whakaawhiwhia te \$2,345.09 ki te \$10 e pātata ana. Whakaawhiwhia te \$7,456 ki te \$100 e pātata ana. Whakaawhiwhia te \$24,509 ki te \$1,000 e pātata ana.

Te Whakaahua ā-Hinengaro

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
Tuhia te rapanga ki te papa tuhituhi, ka pānui tahi ai me ngā ākonga. Ārahina ngā ākonga ki te āta whakaaro i te mahi whakaawhiwhi i roto i ō rātou hinengaro.	He kāmura a Pere – he hanga whare tāna mahi. Ka whiriwhiria e ia ko te \$123,566.89 te utu ki te hanga i tētahi whare. Ka whakaawhiwhia tēnei ki te \$1,000 e pātata ana, koirā tana whakatau utu. He aha tana whakatau utu? He aha ngā mano tāra ki ia taha o te \$123,566.89? (Ko te \$123,000 me te \$124,000.) Whakanōhia ēnei ki tētahi rārangi tau. 

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

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	Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
		<p>Titiro ki te rārangi tau ka āta whakaaro i roto i ō koutou hinengaro te wāhi noho o te \$123,566.78. E pātata ana ki tēhea mano tāra? (E pātata ana ki te \$124,000, nā te mea he nui ake i te \$123,500.)</p>
	Kia pērā anō te tuhi pakitau me te whakaawhiwhi i ēnei rapanga.	<p>Whakaawhiwhia te \$345,902.89 ki te \$1,000 e pātata ana.</p> <p>Whakaawhiwhia te \$266,345.09 ki te \$100 e pātata ana.</p> <p>Whakaawhiwhia te \$794,856.23 ki te \$10,000 e pātata ana.</p> <p>Whakaawhiwhia te \$5,624,509 ki te \$100,000 e pātata ana.</p>

Te Whakamahi Tikanga Tau

Kaua e whakamahi rārangi tau hei whakaoti i ēnei whakaawhiwhinga:

1. Whakaawhiwhia te 9 099.99 ki te 10 e pātata ana.
2. Whakaawhiwhia te 795.078 ki te 100 e pātata ana.
3. Whakaawhiwhia te 94 756.2309 ki te 10 000 e pātata ana.
4. Whakaawhiwhia te 999.999 ki te 1 e pātata ana.
5. Whakaawhiwhia te 11.89 ki te 1 e pātata ana.
6. Whakaawhiwhia te 10 890.8 ki te 100 e pātata ana.
7. Whakaawhiwhia te 956.2709 ki te 10 e pātata ana.
8. Whakaawhiwhia te 999 999.9 ki te 1 e pātata ana.

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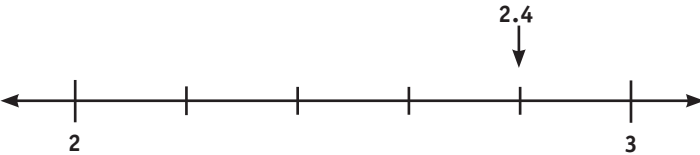
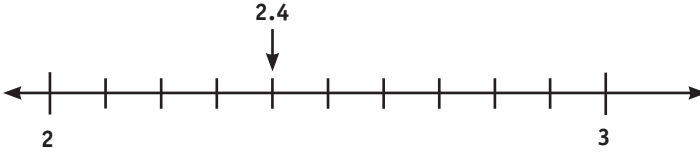
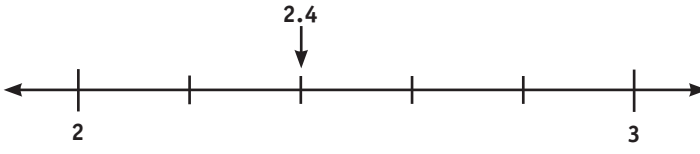
He Hautau, He Tau ā-Ira Whakahēhē

E ako ana ahau ki te whakatau tika i te hautau me te tau ā-ira ki te rārangi tau.

Rauemi

Whārangi Tārua 8–12.

Te Whakamahi Rauemi

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Tuhia te rārangi tau ki te papa tuhituhi, ka whakawhitiwhitiwhiti kōrero ai mō te rapanga.</p>	<p>Koinei te whakatau a Horiana i te wāhi noho o te 2.4 ki tētahi rārangi tau:</p>  <p>He aha i hē ai te whakatau a Horiana i te 2.4 ki tēnei rārangi tau? (Ko te $\frac{4}{10}$ te tikanga o te “.4” i roto i te tau 2.4. Ko te 4 tēnā o roto i te 10. Me wehe te rārangi tau i waenga i te 2 me te 3 kia 10 ngā wāhanga ōrite, ā, ka tohua te wāhanga tuawhā mō te “0.4”.)</p>  <p>Hoki anō ki te rārangi tau a Horiana. Ko hea te wāhi tika mō te 2.4? (Kua wehea tēnei rārangi tau ki ngā haurima. He ōrite te $\frac{4}{10}$ ki te $\frac{2}{5}$.)</p> 
<p>Kei Whārangi Tārua 8–12 ētahi atu rapanga pēnei hei whakaoti mā ngā ākongā.</p>	

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

EA

AA **Te Whakaawhiwhi Tau ā-Ira**

AM

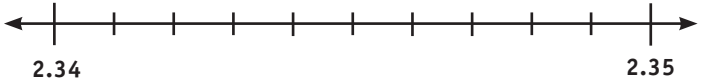
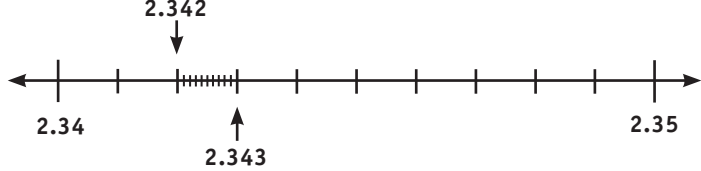
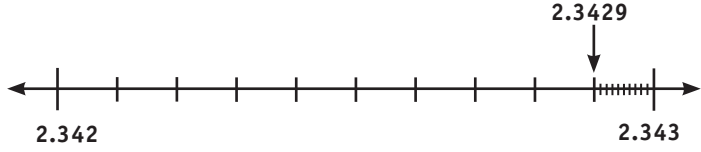
E ako ana ahau ki te whakaawhiwhi tau ā-ira.

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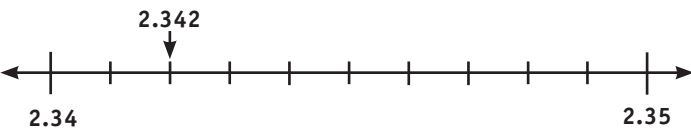
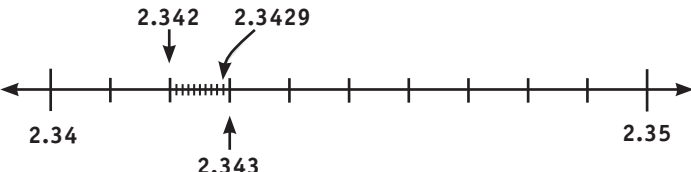
Rauemi

Whārangī Tārua 8–14.

Te Whakamahi Rauemi

Te Mahi a te Pouako	He Taurira Kōrero mā te Pouako
<p>Ārahina ngā ākonga ki te whakatau i te 2.34296 ki tētahi rārangi tau.</p> <p>Whakawhiwhiwhiti kōrero mō te whakaawhiwhi i tēnei tau kia rua, kia toru, kia whā, kia rima ngā mati whai ā-ira.</p>	<p>Ko tā tātou mahi, he whiriwhiri i te wāhi noho mō te 2.34296 ki tēnei rārangi tau.</p>  <p>Ko hea te 2.342? (Kei waenganui i te 2.34 me te 2.35.)</p>  <p>Kia titiro tātou i nāianei ki te 2.3429. E whā ngā mati ā-ira. Ko hea te wāhi noho o te 2.3429?</p>  <p>I nāianei, ka whakamahia te rārangi tau nei ki te whakaawhiwhi i te 2.34296.</p>

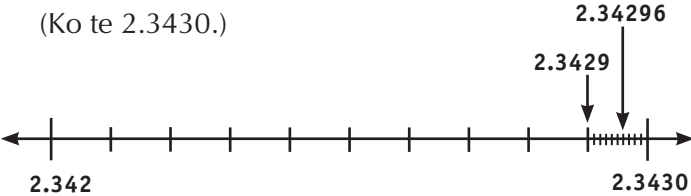

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Te Mahi a te Pouako	He Taurira Kōrero mā te Pouako
<p>Whakawhitiwhiti kōrero mō te whakaawhiwhi i te 2.34296 kia rua ngā mati whai ā-ira.</p>	<p>Whakaawhiwhia te 2.34296 kia rua ngā mati ā-ira. Arā, kia rua anake ngā mati ki muri i te ira. Kei waenganui i te 2.34 me te 2.35. Ko tēhea te mea e pātata ana? (Ko te 2.34.)</p> <div style="text-align: center;">  <p>2.34 2.35</p> </div> <p>Mēnā e whakaawhiwhia ana kia rua ngā mati ā-ira, me titiro ki te mati tuatoru i muri i te ira – ko te 2. He iti iho i te 5, nō reira me whakaawhiwhi ki raro ki te 2.34.</p> <div style="text-align: center;"> <p>mati ā-ira tuatoru</p> <p>2.34296</p> <p>he iti iho i te 5, nō reira e pātata ana ki te 2.34</p> </div>
<p>Whakawhitiwhiti kōrero mō te whakaawhiwhi i tē 2.34296 kia toru ngā mati whai ā-ira.</p>	<p>Whakaawhiwhia te 2.34296 kia toru ngā mati ā-ira. Arā, kia toru ngā mati ki muri i te ira. Kei waenganui i te 2.342 me te 2.343. Ko tēhea te mea e pātata ana? (Ko te 2.343.)</p> <div style="text-align: center;">  <p>2.34 2.342 2.3429 2.343 2.35</p> </div> <p>Mēnā e whakaawhiwhia ana kia toru ngā mati ā-ira, me titiro ki te mati tuawhā i muri i te ira – ko te 9.</p> <p>He nui ake i te 5, nō reira me whakaawhiwhi ki runga ki te 2.343.</p> <div style="text-align: center;"> <p>mati ā-ira tuawhā</p> <p>2.34296</p> <p>he nui ake i te 5, nō reira e pātata ana ki te 2.343</p> </div>

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

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Te Mahi a te Pouako	He Taurira Kōrero mā te Pouako
<p>Whakawhitiwhiti kōrero mō te whakaawhiwhi i te 2.34296 kia whā ngā mati whai ā-ira.</p>	<p>Whakaawhiwhia te 2.34296 kia whā ngā mati ā-ira. Arā, kia whā ngā mati ki muri i te ira. Kei waenganui i te 2.3429 me te 2.3430. Ko tēhea te mea e pātata ana? (Ko te 2.3430.)</p>  <p>Mēnā e whakaawhiwhia ana kia whā ngā mati ā-ira, me titiro ki te mati tuarima i muri i te ira – ko te 6.</p> <p>He nui ake i te 5, nō reira me whakaawhiwhi ki runga ki te 2.3430.</p>  <p>he nui ake i te 5, nō reira e pātata ana ki te 2.3430</p>
<p>Kei Whārangi Tārua 8–14 ētahi atu mahi whakaawhiwhi tau ā-ira hei whakaoti mā ngā ākonga.</p>	

Te Whakamahi Tikanga Tau

1. Whakaawhiwhia te 3.567 kia rua ngā mati ā-ira. (3.57)
2. Whakaawhiwhia te 12.5697 kia kotahi te mati ā-ira. (12.6)
3. Whakaawhiwhia te 109.780678 kia whā ngā mati ā-ira. (109.7807)
4. Whakaawhiwhia te 0.002376 kia rima ngā mati ā-ira. (0.00238)
5. Whakaawhiwhia te 10.09 kia kotahi te mati ā-ira. (10.1)
6. Whakaawhiwhia te 12.5076 kia toru ngā mati ā-ira. (12.508)
7. Whakaawhiwhia te 56.597 kia kotahi te mati ā-ira. (56.6)
8. Whakaawhiwhia te 0.0000371 kia rima ngā mati ā-ira. (0.00004)
9. Whakaawhiwhia te 1.59709272 kia ono ngā mati ā-ira. (1.597093)

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

Te Whakawehe Hautau

E ako ana ahau ki te whakawehe i tētahi hautau ki tētahi atu hautau.

Rauemi

He pepa tukutuku, he rūri.

Te Whakamahi Rauemi

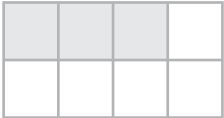

Te Mahi a te Pouako	He Taura Kōrero mā te Pouako
<p>Tuhia te rapanga ki te papa tuhituhi, ka pānui ai.</p> <p>Whakawhitiwhiti kōrero mō te whakawehe i te 3 ki te hautoru.</p>	<p>Ka wehea e Huhana ētahi keke e toru ki te hautoru. E hia katoa ngā hautoru i roto i ngā keke e toru?</p> <p>He aha te whārite hei whakaata i tēnei rapanga?</p> $3 \div \frac{1}{3}$ <p>Anei ētahi tapawhā hāngai hei tohu i ngā keke e toru. Kua wehea ki ngā hautoru. E hia katoa ngā hautoru? (E 9.)</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/> Keke 1</div> <div style="text-align: center;"><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/> Keke 2</div> <div style="text-align: center;"><input type="checkbox"/><input type="checkbox"/><input type="checkbox"/> Keke 3</div> </div>
<p>Tuhia te rapanga ki te papa tuhituhi, ka pānui ai.</p> <p>Whakawhitiwhiti kōrero mō te whakawehe i te $\frac{3}{4}$ ki te $\frac{1}{8}$.</p>	<p>Ka wehea e Mereana te toru hauwhā ($\frac{3}{4}$) keke ki te hauwaru ($\frac{1}{8}$). E hia ngā hauwaru keke i roto i te toru hauwhā keke?</p> <p>He aha te whārite hei whakaata i tēnei rapanga?</p> $\frac{3}{4} \div \frac{1}{8}$ <p>Kua kaurukutia te $\frac{3}{4}$ o tēnei tapawhā rite hei tohu i te toru hauwhā keke.</p> <div style="display: flex; align-items: center;"> $\frac{3}{4}$ <div style="margin-left: 20px;"></div> </div> <p>Ka tuhia ētahi rārangi hei whakaatu i ngā hauwaru. E hia ngā hauwaru i roto i te toru hauwhā? (E 6.)</p> <div style="display: flex; align-items: center;"> $\frac{3}{4} \div \frac{1}{8}$ <div style="margin-left: 20px;"></div> </div>
<p>Kia pērā anō te mahi hei whakaoti i ēnei wehenga:</p> <p>$2 \div \frac{1}{4}$ $\frac{2}{3} \div \frac{1}{6}$ $4 \div \frac{1}{2}$ $\frac{3}{2} \div \frac{1}{8}$</p>	

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

EA
AA
AM
AP

Te Whakaahua ā-Hinengaro

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Tuhia te rapanga ki te papa tuhituhi, ka pānui ai.</p> <p>Whakawhitiwhiti kōrero mō te whakawehe i te $\frac{3}{8}$ ki te $\frac{1}{16}$.</p>	<p>Anei te toru hauwaru ($\frac{3}{8}$) keke. E hiahia ana au ki te whakawehe i te toru hauwaru keke ki te hau tekau-mā-ono ($\frac{1}{16}$): $\frac{3}{8} \div \frac{1}{16}$</p>  <p>Āta whakaarohia ngā rārangi hei whakawehe i te keke nei ki ngā hau tekau-mā-ono ($\frac{1}{16}$). E hia ngā hau tekau-mā-ono ($\frac{1}{16}$) i roto i te toru hauwaru ($\frac{3}{8}$)? (E 6.)</p> 
<p>Kia pērā anō te mahi hei whakaoti i ēnei wehenga:</p> <p>$3 \div \frac{1}{4}$ $\frac{5}{3} \div \frac{1}{6}$ $5 \div \frac{1}{4}$ $\frac{1}{2} \div \frac{1}{6}$</p>	

Te Whakamahi Tikanga Tau

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Tuhia te rapanga ki te papa tuhituhi, ka whakawhitiwhiti kōrero ai mō ngā tikanga tau e whai wāhi atu ana.</p>	<p>E ono hauwaru ($\frac{6}{8}$) te rahi o te keke a Raniera. E hiahia ana ia ki te whakawehe i taua ono hauwaru ($\frac{6}{8}$) ki te kotahi hauwaru ($\frac{1}{8}$).</p> <p>He aha te whārite hei whakaata i te rapanga nei? (Wehea te ono hauwaru ki te kotahi hauwaru: $\frac{6}{8} \div \frac{1}{8}$.)</p> <p>E hia ngā hauwaru i roto i te ono hauwaru? (E 6.)</p>
<p>Kia pērā anō te mahi hei whakaoti i ēnei rapanga:</p> <p>$\frac{3}{4} \div \frac{1}{4}$ $\frac{9}{17} \div \frac{1}{17}$ $\frac{34}{81} \div \frac{1}{81}$ $\frac{89}{108} \div \frac{1}{108}$ $\frac{46}{3} \div \frac{1}{3}$ $\frac{67}{5} \div \frac{1}{5}$</p>	

EA

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AM

AP

Te Mahi a te Pouako	He Taura Kōrero mā te Pouako
<p>Whakawhitiwhiti kōrero mō te whakamahi i tēnei rautaki hei whakaoti i ētahi atu wehenga.</p>	<p>Me pēhea te whakamahi i tēnei rautaki hei whakaoti i te wehenga $\frac{3}{4} \div \frac{1}{8}$? (He ngāwari noa iho te huri i te toru hauwhā ki te ono hauwaru: $\frac{3}{4} = \frac{6}{8}$. Kātahi ka wehea te ono hauwaru ki te hauwaru: $\frac{6}{8} \div \frac{1}{8}$. Arā, e ono ngā hauwaru i roto i te ono hauwaru: $6 \times \frac{1}{8} = \frac{6}{8}$.)</p>
<p>Kia pērā anō te mahi hei whakaoti i ēnei rapanga:</p> <p>$\frac{1}{2} \div \frac{1}{8}$ $\frac{3}{4} \div \frac{1}{16}$ $\frac{5}{3} \div \frac{1}{6}$ $\frac{2}{3} \div \frac{1}{12}$ $\frac{7}{8} \div \frac{1}{4}$ $5 \div \frac{1}{5}$</p>	

He Pātai Aromatawai

Ko te a me te e hei tohu i ētahi tau.

1. He aha te otinga o te wehenga $\frac{a}{e} \div \frac{1}{e}$? (Ko te a .)
2. He aha te otinga o te $a \div \frac{1}{e}$? (Ko te $a \times e$.)

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

EA

AA **Te Whakawehe Hautau Uaua**

AM E ako ana ahau ki te whakawehe hautau.

AP

Te Whakamahi Tikanga Tau

Te Mahi a te Pouako	He Taurira Kōrero mā te Pouako
<p>Tuhia te rapanga ki te papa tuhituhi, ka pānui ai.</p> <p>Whakawhitiwhiti kōrero mō te whakawehe hautau.</p>	<p>E whitu hauwaru ($\frac{7}{8}$) te rahi o te wāhanga keke a Matiu. E hiahia ana ia ki te tapahi i taua wāhanga keke kia rua hauiwa ($\frac{2}{9}$) te rahi o ngā wehenga. E hia ngā wehenga ka taea te tapahi mai?</p> <p>He aha te whārite hei whakaata i te rapanga nei? (Wehea te whitu hauwaru ki te rua hauiwa: $\frac{7}{8} \div \frac{2}{9}$.)</p> <p>He uaua tēnei wehenga nā te mea he rerekē ngā tauraro o ngā hautau. Nō reira, me huri ngā hautau kia ōrite ngā tauraro kātahi ka māmā te whakaoti. (Ko te 72 te taurea pātahi o te 8 me te 9, nō reira me huri ngā hautau nei hei hau whitu-tekau-mā-rua. $\frac{7}{8} = \frac{63}{72}$, $\frac{2}{9} = \frac{16}{72}$. Nō reira, ko te wehenga ōrite ko te $\frac{63}{72} \div \frac{16}{72}$. Ko te $63 \div 16$ te otinga, arā ko te $3\frac{15}{16}$.)</p>
<p>Whāia tēnei rautaki hei whakaoti i ēnei wehenga.</p>	$\frac{2}{3} \div \frac{4}{7} \quad \frac{2}{7} \div \frac{11}{3} \quad \frac{10}{11} \div \frac{9}{4} \quad \frac{5}{6} \div \frac{7}{10}$
<p>Whakawhitiwhiti kōrero mō te tikanga tau e kitea mai ana i tēnei rautaki.</p>	<p>Āta tirohia ngā wehenga nei. He aha tētahi taurira e kitea mai ana?</p> $\frac{2}{3} \div \frac{4}{7} = \frac{14}{12} \quad \frac{2}{7} \div \frac{11}{3} = \frac{6}{77}$ $\frac{10}{11} \div \frac{9}{4} = \frac{40}{99} \quad \frac{5}{6} \div \frac{7}{10} = \frac{50}{42}$ <p>(Huripokina te hautau tuarua, kātahi ka whakarea i ngā hautau e rua. Arā:</p> $\frac{2}{3} \div \frac{4}{7} = \frac{2}{3} \times \frac{7}{4} = \frac{14}{12} \quad \frac{2}{7} \div \frac{11}{3} = \frac{2}{7} \times \frac{3}{11} = \frac{6}{77}$ $\frac{10}{11} \div \frac{9}{4} = \frac{10}{11} \times \frac{4}{9} = \frac{40}{99} \quad \frac{5}{6} \div \frac{7}{10} = \frac{5}{6} \times \frac{10}{7} = \frac{50}{42}$)
<p>He aha te otinga o ēnei wehenga hautau:</p> $\frac{4}{3} \div \frac{3}{8} \quad \frac{2}{3} \div \frac{5}{11} \quad \frac{7}{9} \div \frac{3}{5} \quad \frac{1}{4} \div \frac{5}{6}$	

He Pātai Aromatawai

He aha ngā pū (reta) e tika ana mō roto i ngā pouaka i tēnei whārite?

$$\frac{a}{h} \div \frac{e}{k} = \frac{\square \times \square}{\square \times \square}$$

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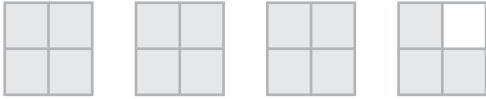
Te Whakarea Hautau ki te Tauoti

E ako ana ahau ki te whakarea i tētahi hautau ki te tauoti.

Rauemi

He rauemi hautau.

Te Whakamahi Rauemi

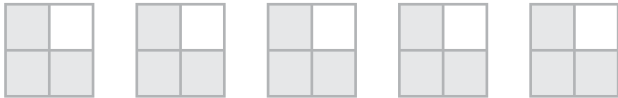
Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Tuhia te rapanga ki te papa tuhituhi, ka pānui ai.</p> <p>Whakawhitiwhiti kōrero mō te rautaki whakaoti i te whakareatanga.</p>	<p>E tika ana kia 4 ngā poraka tiakarete ki roto i te pouaka kotahi. E 5 ngā pouaka, engari kua tangohia tētahi poraka tiakarete i ia pouaka. Ka whakaaro a Manaaki ki te whakatikatika i ngā pouaka. E hia katoa ngā pouaka tiakarete ka hua mai i tāna mahi whakatikatika?</p> <p>He aha te whārite hei whakaata i tēnei rapanga? (He toru hauwhā [$\frac{3}{4}$] o ngā poraka tiakarete kei ia pouaka. E 5 ngā toru hauwhā pouaka tiakarete. Whakareatia te $\frac{3}{4}$ ki te 5: $\frac{3}{4} \times 5$.)</p> <p>Whakaaturia mai ngā $\frac{3}{4}$ e 5 ki ngā rauemi hautau.</p>  <p>Whakakāia ngā pouaka. E hia katoa? (E toru me te toru hauwhā: $3\frac{3}{4}$.)</p>  <p>Tuhia te whārite: $\frac{3}{4} \times 5 = 3\frac{3}{4}$</p>
<p>Kia pērā anō te mahi hei whakaoti i ēnei rapanga:</p> <p>$\frac{3}{4} \times 3$ $\frac{2}{3} \times 3$ $\frac{2}{3} \times 4$ $\frac{4}{5} \times 5$</p>	

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

EA
AA
AM
AP

Te Whakamahi Tikanga Tau

Te Mahi a te Pouako	He Taura Kōrero mā te Pouako
<p>Whakawhitiwhiti kōrero mō te tikanga tau e kitea mai ana i te whakareatanga o tētahi hautau ki tētahi tauoti.</p>	<p>Anei te pikitia o te whakareatanga $\frac{3}{4} \times 5$.</p>  <p>E hia katoa ngā hauwhā? (15.)</p> <p>Tuhia te whārite me te otinga: $\frac{3}{4} \times 5 = \frac{15}{4}$.</p> <p>He aha te taura e kitea mai ana? (Whakareatia te taurunga ki te tauoti, arā, $3 \times 5 = 15$, ka pūmau tonu te tauraro.)</p> <p>I nāianei ka hurihia te hautau $\frac{15}{4}$ hei tau hanumi, arā, wehea te 15 ki te 4, ka 3 me te toru hauwhā ($3 \frac{3}{4}$).</p>
<p>Kia pērā te whakaoti i ēnei whakareatanga:</p> <p>$\frac{3}{7} \times 10$ $\frac{1}{5} \times 100$ $\frac{2}{9} \times 20$ $\frac{3}{4} \times 11$</p>	

EA

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Te Whakarea i te Hautau ki te Hautau

E ako ana ahau ki te whakarea hautau.

Rauemi

He pepa tukutuku, he kutikuti.

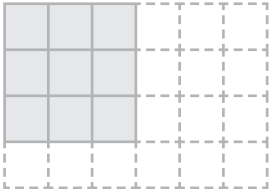
Te Whakamahi Rauemi

Te Mahi a te Pouako	He Taura Kōrero mā te Pouako
<p>Tuhia te rapanga ki te papa tuhituhi, ka pānui ai.</p> <p>Whakatauiratia te whakareatanga o ētahi hautau e rua ki te pepa tukutuku.</p>	<p>E whakatō rīwai ana a Harata. Ka wehea te toru hauwhā ($\frac{3}{4}$) o tōna pātiki hei wāhi whakatō i āna rīwai. Kātahi ia ka whakaaro kia toru haurima ($\frac{3}{5}$) o tēnei wāhi mō te pārakaraka (tētahi momo rīwai). He aha te hautanga o te pātiki hei whakatō i ngā pārakaraka?</p> <p>Anei te kāri hei tohu i te katoa o te pātiki. Kua wehea ki ngā hauwhā.</p> <div style="text-align: center;"> </div> <p>Ka tapahia te kāri hei whakaatu i te toru hauwhā.</p> <div style="text-align: center;"> </div> <p>Ka wehea te toru hauwhā nei ki ngā haurima. Ko te toru haurima o te toru hauwhā te rohe hei whakatō i ngā pārakaraka.</p> <div style="text-align: center;"> </div>

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

EA
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AM
AP

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
	<p>Ka tapahia te kāri hei whakaatu i te toru haurima o te toru hauwhā. I nāianei ka whakatairite i te rahi o tēnei wāhanga ki te katoa o te pātiki:</p>  <p>E 20 ngā tukutuku i te kāri e tohu ana i te katoa o te pātiki. E 9 ngā tukutuku i te kāri e whakaatu ana i te toru haurima o te toru hauwhā.</p> <p>He aha te hautau? (Ko te iwa hau rua-tekau: $\frac{9}{20}$.)</p> <p>Me pēhea te tuhi i te rapanga nei hei whārite? $\frac{3}{5} \times \frac{3}{4} = \frac{9}{20}$</p>
<p>Kia pērā anō te mahi hei whiriwhiri i ngā whakareatanga nei.</p>	<p>Kia 4 mā te 4 te rahi o te tukutuku hei whiriwhiri i te toru hauwhā o te toru hauwhā ($\frac{3}{4} \times \frac{3}{4}$).</p> <p>Kia 3 mā te 5 te rahi o te tukutuku hei whiriwhiri i te toru haurima o te rua haurima ($\frac{3}{5} \times \frac{2}{3}$).</p> <p>Kia 3 mā te 5 te rahi o te tukutuku hei whiriwhiri i te rua haurima o te toru haurima ($\frac{2}{3} \times \frac{3}{5}$).</p>

He Pātai Aromatawai

He aha te rahi o te tukutuku hei whiriwhiri i te rima hauono o te whā hauwhitu ($\frac{5}{6} \times \frac{4}{7}$)? He aha te otinga? Whakamāramatia mai.

EA

AA

AM

AP

Te Whakamahi Tikanga Tau

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
Whakawhitiwhiti kōrero mō te tikanga tau i roto i te whakareatanga o ētahi hautau e rua.	<p>Me āta tiro tiro ngā whakareatanga hautau kua oti nei i a tātou:</p> $\frac{3}{5} \times \frac{3}{4} = \frac{9}{20} \qquad \frac{3}{4} \times \frac{3}{4} = \frac{9}{16}$ $\frac{3}{5} \times \frac{2}{3} = \frac{6}{15} \qquad \frac{2}{3} \times \frac{3}{5} = \frac{6}{15}$ <p>He aha tētahi tauira e kitea mai ana? (Whakareatia ngā taurunga, whakareatia ngā tauraro.)</p>
Hoatu he mahi atu anō hei whakapakari i ngā ākongā ki te whakamahi i te tikanga tau mō te whakarea i ētahi hautau e rua.	<p>Tuhia he pakitau mō ēnei whakareatanga, ka whakaoti ai.</p> $\frac{7}{10} \times \frac{9}{10} \qquad \frac{2}{5} \times \frac{3}{4}$ $\frac{8}{11} \times \frac{3}{10} \qquad \frac{6}{7} \times \frac{3}{100}$

He Pātai Aromatawai

He aha ngā pū (reta) e tika ana mō roto i ngā pouaka i tēnei whārite?

$$\frac{a}{h} \times \frac{e}{k} = \frac{\square \times \square}{\square \times \square}$$

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

EA

AA

He Whakarea, He Whakaiti

AM

E ako ana ahau i te tikanga nei:

AP

Mēnā ka whakareatia mā tētahi tau iti iho i te kotahi, he iti anō hoki te otinga.

Rauemi

He tātaitai, Whārangī Tārua 8–15.

Te Whakamahi Tikanga Tau

Te Mahi a te Pouako	He Taurira Kōrero mā te Pouako
Tuhia te rapanga ki te papa tuhituhi, ka pānui ai.	<p>\$9.78 te utu ā-manokaramu (kg) mō te tiakarete. Ka hokona e Reweti te 0.345 manokaramu (kg). He aha te utu?</p> <p>He aha te whārite hei whakaata i te rapanga nei? ($0.345 \times \\$9.78$)</p> <p>He iti ake i te \$9.78, he nui ake rānei te utu o ngā tiakarete ka hokona e Reweti? (He iti ake nā te mea he iti ake i te manokaramu ngā tiakarete i hokona e Reweti.)</p> <p>Whakatau tata i te utu o ngā tiakarete. (He tino pātata te 0.345 ki te toru hautekau [$\frac{3}{10}$]. He pātata hoki te \$9.78 ki te \$10. Ko te toru hautekau o te 10, ko te 3: $\frac{3}{10} \times 10 = 3$.)</p> <p>Whakamahia te tātaitai ki te whiriwhiri i te otinga tōtika. Kia whaitake anō te whakaawhiwhi i te otinga ka puta ki te tātaitai. ($0.345 \times 9.78 = 3.3741$. Nō reira ko te \$3.37 te utu o ngā tiakarete.)</p>
Hoatu te Whārangī Tārua 8–15 hei whakaoti mā ngā ākongā.	

He Pātai Aromatawai

He nui ake i te 56.8, he iti ake rānei te otinga o te 1.089×56.8 ?
(He nui ake nā te mea he nui ake i te 1 te tau whakarea 1.089.)

He nui ake i te 567, he iti ake rānei te otinga o te 0.000123×567 ?
(He iti ake nā te mea he iti ake i te 1 te tau whakarea 0.000123.)

EA

AA

AM

AP

He Iti Ake, he Nui ake Rānei?

E ako ana ahau i te tikanga:

Ki te wehea tētahi tau ki te tauwehe iti ake i te kotahi, he nui ake te otinga i te tau tīmatanga.

Rauemi

He ngaku pepa, he kutikuti, Whārangi Tārua 8–16.

Te Whakamahi Rauemi

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako				
<p>Tuhia te rapanga ki te papa tuhituhi, ka pānui ai.</p> <p>Whakatauiratia te rapanga ki te ngaku pepa, ka ārahi ai i ngā ākonga ki te whakaoti i te rapanga.</p>	<p>E mahi ana a Morihana i te hokomaha. Ko tāna mahi, he tapahi, he takai i ngā poraka tīhi.</p> <p>E 4 kg te taumaha o te poraka, ā, ko tā Morihana he tapahi kia 0.5 kg te taumaha. E hia ngā poraka tīhi 0.5 kg te taumaha ka puta i te poraka whā kg?</p> <p>He aha te whārite hei whakaata i te rapanga nei? (Wehea te 4 ki te 0.5. E hia ngā 0.5 kei roto i te 4? $4 \div 0.5$.)</p> <p>Anei te ngaku pepa hei tohu i te poraka tīhi e 4 kg te taumaha. Kua tohua ia 1 kg.</p> <table border="1"> <tr> <td>1kg</td> <td>1kg</td> <td>1kg</td> <td>1kg</td> </tr> </table> <p>E hia ngā 0.5 manokaramu kei roto i ia kg? (E 2.)</p> <p>Nō reira, e hia kei roto i ngā manokaramu e whā? (E 8.)</p> <p>Anei te whārite: $4 \div 0.5 = 8$. He nui ake te otinga i te tau tīmatanga (he nui ake te 8 i te 4). He aha ai? (Nā te mea i wehea te 4 ki tētahi tauwehe he iti ake i te kotahi.)</p>	1kg	1kg	1kg	1kg
1kg	1kg	1kg	1kg		
<p>Kia pērā anō te mahi hei whakaoti i ēnei rapanga:</p> <p>$3 \div 0.5 = \square$ $2 \div 0.25 = \square$ $3.5 \div 0.5 = \square$ $1 \div 0.25 = \square$</p>					

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

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Te Whakaahua ā-Hinengaro

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Tuhia te rapanga ki te papa tuhituhi, ka pānui ai.</p> <p>Ārahina ngā ākongā ki te āta whakaaro i ngā rauemi i roto i ō rātou hinengaro hei whakaoti i te rapanga.</p>	<p>E 5 kg te taumaha o te poraka tiakarete a Horiana. Kei te wehea te poraka tiakarete nei ki ētahi pākete 0.25 kg te taumaha hei hoko i te rā mahi moni o tōna kura. E hia ngā pākete tiakarete 0.25 kg ka puta mai i te poraka tiakarete 5 kg?</p> <p>He aha te whārite hei whakaata i te rapanga nei? ($5 \div 0.25$)</p> <p>Whakaarohia te 1 kg tiakarete. E hia ngā pākete 0.25 kg ka puta i te 1 kg? (E 4. E 4 ngā 0.25 kei roto i te 1.)</p> <p>Nō reira, e hia ngā pākete ka puta i te 5 kg? (20. E 4 mai i ia manokaramu, nō reira, whakareatia te 4 ki te 5. $5 \div 0.25 = 20$.)</p>
<p>Kia pērā anō te mahi hei whakaoti i ēnei rapanga:</p> <p>$1.25 \div 0.25 = \square$ $8 \div 0.5 = \square$ $2.5 \div 0.25 = \square$</p>	

Te Whakamahi Tikanga Tau

Hoatu te Whārangi Tārua 8–16 hei whakaoti mā ngā ākongā.

He Pātai Aromatawai

1. Mō te wehenga $a \div e$, he aha tētahi tau hei whakakapi i te e , kia iti ake te otinga i te a ?
2. Mō te wehenga $a \div e$, he aha tētahi tau hei whakakapi i te e , kia nui ake te otinga i te a ?

EA

AA

AM

AP

Te Whakatau Tata i te Whakareatanga Tau ā-Ira, Whakawehenga Tau ā-Ira

E ako ana ahau ki te tiroiro i te tika o te otinga ki te whakareatanga tau ā-ira, whakawehenga tau ā-ira mā te whakatau tata.

Rauemi

Whārangi Tārua 8–17.

Te Whakamahi Tikanga Tau

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
Whakawhitiwhiti kōrero mō te whakatau tata i te otinga o tētahi whakareatanga tau ā-ira, whakawehenga tau ā-ira rānei.	<p>Me pēhea te whakatau tata i te whakareatanga nei: 0.503×58.7? (E pātata ana te 0.503 ki te 0.5. E pātata ana te 58.7 ki te 60. Nō reira ka whakareatia te 0.5 ki te 60, ka 30. Koirā te whakatau tata. Whakaawhiwhia ngā tau ki ētahi tau māmā.)</p> <p>Ka patoa e Maire te whakareatanga nei ki tana tātaitai:</p> <p>$34.56 \div 0.98$. Ka puta te otinga 33.8688. Ki te titiro noa atu, e tika ana tēnei otinga? (Kāore i te tika. Nā te mea he iti ake te 0.98 i te kotahi, he nui ake te otinga i te 34.56.)</p> <p>He aha te whakataunga tata i te 59.89×0.091? (Whakaawhiwhia ki ngā tau māmā. E pātata ana te 59.89 ki te 60. E pātata ana te 0.091 ki te 0.1. Whakareatia te 60 ki te 0.1 [te kotahi hau tekau $\frac{1}{10}$], ka 6.)</p>
Hoatu te Whārangi Tārua 8–17 hei whakaoti mā ngā ākonga.	

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

EA

AA **Tātaítanga Ōrau**

AM E ako ana ahau ki te whakatairite hautau mā te tātai ōrau.

AP

Rauemi

He tātaítai, Whārangī Tārua 8–18.

Te Whakamahi Tikanga Tau

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Tuhia te rapanga ki te papa tuhituhi, ka pānui ai.</p> <p>Whakawhitiwhiti kōrero mō te tātai ōrau hei whakatairite hautau.</p>	<p>Tērā te umanga a Tame, \$456,789.23 te tapeke o ngā hokonga i tētahi tau. O tēnei tapeke, ko te \$57,892.12 te hua ki te umanga.</p> <p>Tērā te umanga a Manuao, \$4,489,000.89 te tapeke o ngā hokonga i tētahi tau. O tēnei tapeke, ko te \$453,884.01 te hua ki te umanga.</p> <p>Hurihia ngā hua moni a ēnei umanga hei ōrau, kia kitea ai ko tēhea te umanga tino māia ki te whakaputa hua moni.</p> <p>(Ko te hautanga o te hua moni a te umanga a Tame, ko te $\frac{57\,892.12}{456\,789.23}$. Ka whakamahia te tātaítai, ko te 0.126737051 te huatanga ā-ira. Ka whakaawhiwhia kia toru ngā mati ā-ira, ko te 0.127. Ko te 12.7% te hua moni a te umanga a Tame.</p> <p>Ko te hautanga o te hua moni a te umanga a Manuao, ko te $\frac{453\,884.01}{4\,489\,000.89}$. Ka whakamahia te tātaítai, ko te 0.101110251 te huatanga ā-ira. Ka whakaawhiwhia kia toru ngā mati ā-ira, ko te 0.101. Ko te 10.1% te hua moni a te umanga a Manuao.</p> <p>Nō reira, he āhua māia ake te umanga a Tame ki te whakaputa hua nā te mea ko te 12.7% te hua ōrau, tērā i te umanga a Manuao – ko te 10.1% te hua ōrau.)</p>
<p>Hoatu te Whārangī Tārua 8–18 hei whakaoti mā ngā ākongā.</p>	

He Pātai Aromatawai

Whakaarohia ētahi hautau e rua, e pātata ana tētahi ki tētahi. Hurihia hei ōrau kia kitea ai ko tēhea te hautau nui rawa.

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Te Whakatau Tata i te Ōrau

E ako ana ahau ki te whakamahi hautau ōrite ki te whakatau tata i te ōrau o tētahi tau.

Rauemi

Whārangi Tārua 8–19.

Mahi Tōmua

Me mōhio ngā ākongā ki ēnei hautau ōrite. Whakamātauria.

10%	12.5%	20%	25%	50%
$\frac{1}{10}$	$\frac{1}{8}$	$\frac{1}{5}$	$\frac{1}{4}$	$\frac{1}{2}$

Te Whakamahi Tikanga Tau

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Tuhia te rapanga ki te papa tuhituhi, ka pānui ai.</p> <p>Whakawhitiwhiti kōrero mō te whakatau tata i te ōrau o tētahi tau.</p>	<p>Ka patoa e Miriama tana tātaitai ki te whiriwhiri i te 4.9% o te \$456. Ko te \$22.36 te otinga ka puta. Me pēhea te whakatau tata i te otinga kia āta mōhiohia ai mēnā i tika tā te tātaitai?</p> <p>E pātata ana te 4.9% ki te 5%. E pātata ana te \$456 ki te \$460. Engari he uaua tonu te whiriwhiri i te 5% o te \$460. He aha te ōrau he māmā noa iho te whiriwhiri? (Ko te 10%, nā te mea ko te hautekau [$\frac{1}{10}$] tēnā. He māmā te whakawehe i tētahi tau ki te 10.)</p> <p>Ka whiriwhiria te 10%, kātahi ka haurua i tēnā, ka 5%. (Ko te \$46.00 te 10% o te \$460. Hauruatia te \$46.00, ka \$23.00. Nō reira, ko te \$23 te whakataunga tata mō te 4.9% o te \$456.)</p> <p>Nō reira ki te titiro atu, kei te tika te otinga i puta i te tātaitai a Miriama? (Āe, nā te mea e pātata ana te \$22.36 i puta i te tātaitai ki te \$23.00 – te whakataunga tata.)</p>

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

EA

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Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
Kia pērā anō te mahi mō tēnei rapanga.	<p>E ai ki te rangahau a tētahi wheketere waihanga pouaka whakaata, e hapa ana te 16% o ngā pouaka whakaata 3 961 i whakaputaina i tētahi marama. He aha te whakataunga tata o te maha o ngā pouaka whakaata e hapa ana?</p> <p>He aha te whārite hei whakaata i te rapanga? (16% o te 3 961 = <input type="text"/>)</p> <p>E pātata ana te 16% ki te 15%, ko te 10% me te 5%. E pātata ana te 3 961 ki te 4 000. Nō reira he aha te whakataunga tata?</p> <p>(10% o te 4000 = 400 5% o te 4000 = 200 (haurua o te 10%) Nō reira 15% o te 4000 = 600.)</p>
Hoatu te Whārangi Tārua 8–19 hei whakaoti mā ngā ākonga.	

He Pātai Aromatawai

Whakamāramatia mai me pēhea te whakatau tata i te 61% o tētahi tau.

(Whiriwhiria te 50% me te 10% o te tau, ka tāpiri ai.)

EA

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He Rautaki Matarua Hei Whakaoti Rapanga Ōrau

E ako ana ahau ki te tātai whakapikinga ōrau, whakahekenga ōrau hoki mā te rautaki matarua.

Rauemi

He tātaitai, Whārangi Tārua 8–20.

Te Whakamahi Tikanga Tau

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Tuhia te rapanga ki te papa tuhituhi, ka pānui ai.</p> <p>Whakawhitiwhiti kōrero mō te rautaki matarua hei tātai whakapikinga ōrau.</p> <p>Tuhia ngā mahi ki te papa tuhituhi.</p> <p>Mahi 1: $0.79 \times 24.85 = 19.6315$</p> <p>Mahi 2: $19.6315 + 24.85 = 44.4815$</p> <p>Whakaawhiwhinga: \$44.48</p>	<p>Ka hoko mai a Matiu i ētahi hāte hei hoko atu māna i tana toa kākahu. Ka utua e Matiu te \$24.85 mō te hāte kotahi. Ko te 79% te whakapikinga o te utu ka tāpirihia e Matiu. E hia te utu o ngā hāte ka hokona atu i tana toa?</p> <p>Ko te 79% te whakapikinga o te utu. E hia tāra te whakapikinga o te utu? Me pēhea te tātai i te whakapikinga ā-tāra? (Ka tātaihia te 79% o te \$24.85. He ōrite te 79% ki te 0.79. Nō reira ka whakareatia te 0.79 ki te 24.85. Ka whakamahia te tātaitai, ko te 19.6315 te otinga.)</p> <p>Koirā te mahi tuatahi. Kaua e whakaawhiwhia te otinga o te mahi tuatahi – me waiho te whakaawhiwhinga kia oti rā anō ngā mahi e rua. He aha te mahi tuarua? (Tāpirihia te 19.6315 ki te 24.85. Ko te 19.6315 te whakapikinga ā-tāra, ko te 24.85 te utu o ngā hāte ka utua e Matiu.)</p> <p>Kei runga tonu i te tātaitai te 19.6315, nō reira ko te tāpiri noa i te 24.85. Ka hia? (Ka 44.4815.)</p> <p>Me whakaawhiwhi i nāiane. (Ko te \$44.48 te utu o ngā hāte ka hokona atu i te toa o Matiu.)</p>

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

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Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
Kia pērā anō mō te rapanga whakahekenga ōrau nei.	<p>Ko Māmā Parāone kei te whakahaere i tētahi toa hoko huawhenua, huarākau hoki. Ka hokona mai e ia ngā paukena 450 hei hoko atu anō māna ki te iwi. Ka pirau te 14% o ēnei paukena i mua i te hokona atu e Māmā Parāone. E hia ngā paukena ka hokona e ia?</p> <p>Ka pirau te 14% o ngā paukena 450. He pēhea te tātai i te maha o ngā paukena ka pirau? (Ka tātaihia te 14% o te 450. He rite te 14% ki te 0.14. Whakareatia te 0.14 ki te 450, ka 63.)</p> <p>He aha te mahi i nāiane? (Tangohia ngā paukena pirau 63 i te 450. Ka 387. Koirā te maha o ngā paukena ka hokona e Māmā Parāone.)</p>
Hoatu te Whārangi Tārua 8–20 hei whakaoti mā ngā ākonga.	

He Pātai Aromatawai

Tuhia he rapanga whakapikinga ōrau, whakahekenga ōrau rānei. Whakaotia tō rapanga, ka whakamārama ai i ngā mahi.

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He Rautaki Matatahi Hei Whakaoti Rapanga Ōrau

E ako ana ahau ki te tātai whakapikinga ōrau, whakahekenga ōrau hoki mā te rautaki matatahi.

Rauemi

He ngaku pepa, he kutikuti, he tātaitai, Whārangi Tārua 8–21.

Te Whakamahi Rauemi

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Tuhia te rapanga ki te papa tuhituhi, ka pānui ai. Whakatauiratia te rapanga ki te ngaku pepa.</p>	<p>Ka whakawhānau punua kāwhe te kāhui kau a Kaipāmu Horomia. Ka whakapikia tana kāhui kau mā te 50%.</p> <p>Anei tētahi ngaku pepa hei tohu i te kāhui kau a Kaipāmu Horomia i te tīmatanga. He aha te take kua tuhia te 100% ki tēnei ngaku pepa? (Nā te mea koirā hei tohu i te katoa – te 100% – o tana kāhui kau i te tīmatanga.)</p> <p>He aha te ngaku pepa e tika ana hei tohu i te whakapikinga o tana kāhui kau? (Ko te 50% te whakapikinga nō reira, tapahia tētahi ngaku pepa, he haurua te rahi.)</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; text-align: center;">100%</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">50%</div> </div> <p>Mēnā e 70 ana kau i te tīmatanga, e hia ngā kau i muri mai i te whakapikinga mā te 50%? (Tātaihia te 150% o te 70. He rite te 150% ki te 1.5. Whakareatia te 70 ki te 1.5, ka 105.)</p>

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

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Te Mahi a te Pouako	He Taurira Kōrero mā te Pouako		
Kia pērā anō te mahi nei.	<p>Ka whakahekea te taupori o tētahi tāone mā te 6%.</p> <p>Anei te ngaku pepa hei tohu i te taupori o te tāone i mua i te whakahekenga. Mēnā ka tapahia te 6% o te ngaku pepa nei, ko te 94% o te pepa e toe ana.</p> <p>Nō reira, mēnā 12 500 te taupori o te tāone i mua i te whakahekenga, me pēhea te tātai i te taupori i muri i te whakahekenga? (Tātaihia te 94% o te 12 500. Arā, whakareatia te 0.94 ki te 12 500, ka 11 750.)</p> <div style="text-align: right;"> <table border="1" style="margin-left: auto;"> <tr><td style="text-align: center;">100%</td></tr> <tr><td style="text-align: center;">94%</td></tr> </table> </div>	100%	94%
100%			
94%			

Te Whakamahi Tikanga Tau

Te Mahi a te Pouako	He Taurira Kōrero mā te Pouako
<p>Tuhia te rapanga ki te papa tuhituhi, ka pānui ai.</p> <p>Whakawhitiwhiti kōrero mō te rautaki hei tātai i te tāpiritanga o te tāke hokohoko (GST) 12.5%.</p>	<p>Ko te utu i tonoa e tētahi kaipeita mō te peita i te whare o Himiona, ko te \$4,123, tāpiri i te 12.5% mō te tāke hokohoko (GST).</p> <p>Me pēhea te tātai i te katoa o te utu? $(100\% + 12.5\% = 112.5\%$. Hurihia te 112.5% hei tau ā-ira – $112.5\% = 1.125$. Whakareatia te 4 123 ki te 1.125, ka 4 638.375.)</p> <p>He aha te whakaawhiwhinga whitake? (Ko te \$4,638 – ki te tāra e pātata ana – kāore he take o te hēneti mēnā he nui ake i te \$4,000 te utu.)</p>
Hoatu te Whārangi Tārua 8–21 hei whakaoti mā ngā ākonga.	

He Pātai Aromatawai

Kua whakapikia te tāke hokohoko (GST) ki te 20%. Whakamāramatia mai me pēhea te tātai i te katoa o te utu mō tētahi mea i muri i te tāpiritanga o te tāke hokohoko.

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Te Pūrua

E ako ana ahau i te tikanga nei mō te pūrua:

He ōrite te horahanga o tētahi tapawhā rite ki te pūrua o tētahi o ngā tapa.

Rauemi

He pepa tukutuku, he kāri tapawhā rite, he tātai.

Te Whakamahi Rauemi

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Tuhia te rapanga ki te papa tuhituhi, ka pānui ai.</p> <p>Whakawhitiwhiti kōrero mō te tātai i te horahanga o tētahi tapawhā rite, me te tikanga o te tohu pūrua (²).</p>	<p>E whakatakoto ana a Hariata i ētahi papariki ki te papa o tōna whare. He tapawhā rite te āhua o ngā papariki. E waru ngā rārangi papariki, e waru kei ia rārangi. E hia katoa ngā papariki?</p> <p>Hoahoatia ngā papariki ki te pepa tukutuku. E waru ngā rārangi, e waru ngā papariki kei ia rārangi.</p> <div style="text-align: center;"> </div> <p>He aha te whārite hei tātai i te maha o ngā papariki? (Whakareatia te 8 ki te 8, ka 64 arā $8 \times 8 = 64$.)</p> <p>Arā tētahi atu momo tuhinga mō te 8×8. E pēnei ana: 8^2. Ka kiia, “te pūrua o te 8”, “pūruatia te waru”, rānei. Whakamahia tēnei tohu, ka tuhi anō ai i te whārite: $8^2 = 64$.</p>

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

EA

AA

AM

Te Whakaahua ā-Hinengaro

AP

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Ārahina ngā ākonga ki te whakaahua ā-hinengaro i te tātaitanga horahanga o tētahi tapawhā.</p>	<p>Anei anō tētahi rapanga. Me āta whakaahua ā-hinengaro te āhua o ngā papariki.</p> <p>E whakatakoto ana a Hariata i ētahi papariki ki te papa o tōna whare. He tapawhā rite te āhua o ngā papariki. Tekau ngā rārangi papariki, tekau kei ia rārangi. E hia katoa ngā papariki?</p> <p>He aha te whārite hei tātai i te maha o ngā papariki? (Pūruatia te 10, ka 100 arā $10^2 = 100$.)</p>
<p>Kia pērā anō te mahi nei.</p>	<p>E whā ngā rārangi papariki, e whā ngā papariki kei ia rārangi.</p> <p>E whitu ngā rārangi papariki, e whitu ngā papariki kei ia rārangi.</p> <p>E iwa ngā rārangi papariki, e iwa ngā papariki kei ia rārangi.</p> <p>E ono ngā rārangi papariki, e ono ngā papariki kei ia rārangi.</p>

Te Whakamahi Tikanga Tau

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Ārahina ngā ākonga ki te whakamahi i te pātuhi x^2 i ā rātou tātaitai.</p>	<p>Mēnā 134 mā te 134 ngā papariki ka whakatakotoria ki tētahi papa, e hia katoa ngā papariki?</p> <p>He aha te whārite? (134^2)</p> <p>Kimihia te pātuhi x^2 i ā koutou tātaitai. Me pēhea te whakamahi i tēnei pātuhi hei whakaoti i te 134^2? (Koia nei ngā pātuhi: 134, kātahi ko te x^2, kātahi ko te = .)</p>

EA

AA

AM

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Te Mahi a te Pouako	He Taura Kōrero mā te Pouako
<p>Hoatu he rapanga pēnei i tēnei hei whakaoti mā ngā ākongā.</p>	<p>E 38 ngā rārangi papariki, e 38 ngā papariki kei ia rārangi. E \$3 te utu mō ia papariki. He aha te utu mō ngā papariki katoa?</p> <p>(Tuatahi, ka whiriwhiria te maha o ngā papariki: $38^2 = 1\,444$. Whakareatia tēnei ki te 3 nā te mea e \$3 te utu mā ia papariki. $1\,444 \times 3 = \\$4,332$.)</p> <p>He aha te utu mā ngā papariki mēnā:</p> <ul style="list-style-type: none"> • 13 mā te 13 ngā papariki? • 24 mā te 24 ngā papariki? • 209 mā te 209 ngā papariki? • 900 mā te 900 ngā papariki?

He Pātai Aromatawai

Ko te a me te h hei tohu i ētahi tau. He aha te whārite hei tātai i te utu o ngā papariki o tētahi papa, mēnā ko te a te maha o ngā rārangi papariki, ko te a te maha o ngā papariki kei ia rārangi, ā, ko te h te utu mō ia papariki? ($a^2 \times h$).

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

EA

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Te Pūtakerua

AM

E ako ana ahau i te tikanga nei o te pūtakerua:

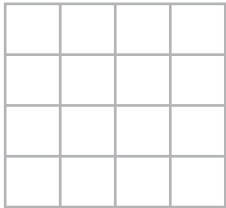
AP

He ōrite te tapa o tētahi tapawhā rite ki te pūtakerua o te horahanga.

Rauemi

He kāri tapawhā rite, he tātaitai.

Te Whakamahi Rauemi

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
Tuhia te rapanga ki te papa tuhituhi, ka pānui ai.	<p>Ka whakatakotoria e Hana ngā papariki 16 ki te papa o tōna kāinga. He tapawhā rite te āhua o ngā papariki, he tapawhā rite hoki te āhua o te papa. E hia ngā papariki ki ia tapa o te tapawhā nui o te papa?</p>  <p>Whakatakotoria ngā kāri kia rite ki ngā papariki ka whakatakotoria e Hana. E hia ngā kāri ki ia tapa? (E 4.)</p> <p>Ka taea te tuhi whārite hei whakaata i te rapanga nei. E pēnei ana te tuhi: $\sqrt{16} = 4$. Ko te ingoa o te tohu ko te “pūtakerua”. Ko te 4 te pūtakerua o te 16, nā te mea ki te whakareatia te 4 ki te 4, ka 16. Arā $4 \times 4 = 16$, nō reira, $\sqrt{16} = 4$.</p>
Kia pērā anō te mahi nei.	<p>Whakamahia ētahi kāri e 4, ka hanga ai i tētahi tapawhā rite nui. E hia ngā kāri ki ia tapa? Tuhia te whārite e hāngai ana. ($\sqrt{4} = 2$)</p> <p>Whakamahia ētahi kāri 25, ka hanga ai i tētahi tapawhā rite nui. E hia ngā kāri ki ia tapa? Tuhia te whārite e hāngai ana. ($\sqrt{25} = 5$)</p> <p>Whakamahia ētahi kāri e 9, ka hanga ai i tētahi tapawhā rite nui. E hia ngā kāri ki ia tapa? Tuhia te whārite e hāngai ana. ($\sqrt{9} = 3$)</p>

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Te Whakaahua ā-Hinengaro

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Tuhia te rapanga ki te papa tuhituhi, ka pānui ai.</p> <p>Ārahina ngā ākongā ki te āta whakaahua i te tapawhā nui i rō hinengaro, me te maha o ngā papariki ki ia tapa.</p>	<p>Ka whakamahia e Hinewai ētahi papariki 36 (he tapawhā rite te āhua o ngā papariki) hei hanga i tētahi tapawhā rite nui. E hia ngā papariki ki ia tapa o te tapawhā rite nui?</p> <p>Āta whakaarohia te tapawhā rite nui. He ōrite te maha o ngā rārangi me te maha o ngā papariki ki ia rārangi. He aha te tau, ina whakareatia taua tau ki a ia anō, ka rite ki te 36? (Ko te 6. E 6 ngā papariki ki ia tapa o te tapawhā rite nui.)</p>
<p>Kia pērā anō te mahi hei whiriwhiri i te maha o ngā papariki ki ia tapa mēnā ko te maha o ngā papariki katoa ko te: 49 100 81 ...</p>	

Te Whakamahi Tikanga Tau

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Tūhuratia te whakamahinga o te pātuhi \sqrt{x} i te tātaitai hei whakaoti rapanga e whai wāhi mai ana te pūtakerua.</p>	<p>961 ngā papariki ka whakatakotoria e Henare (he tapawhā rite te āhua o ngā papariki). He tapawhā rite te āhua o te papa ka hua mai. E hia ngā papariki ki ia tapa o te tapawhā nui?</p> <p>He aha te whārite hei whakaata i te rapanga nei? $\sqrt{961} = \square$.</p> <p>Kimihia te pātuhi \sqrt{x} i ā koutou tātaitai. Me pēhea te whakamahi i tēnei pātuhi hei kimi i te pūtakerua o te 961? (Koia nei ngā pātuhi: \sqrt{x}, kātahi ko te 961, kātahi ko te =.</p> <p>Ka puta ko te 31. 31 ngā papariki ki ia tapa o te tapawhā rite nui. Mēnā ka whakareatia te 31 ki te 31, ko te 961 te otinga.)</p>
<p>Whakamahia te tātaitai hei whiriwhiri i te maha o ngā papariki ki ia tapa mēnā ko te maha o ngā papariki katoa, ko te: 207 936 2 025 622 521 2 217 121 ...</p>	

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

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Te Pūtoru me te Pūtaketoru

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E ako ana ahau i ngā tikanga nei:

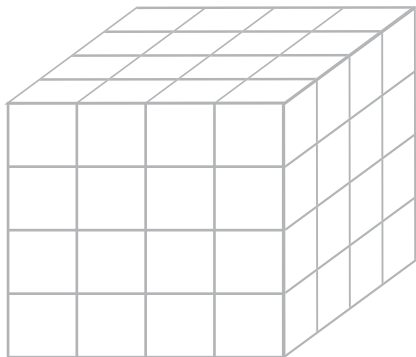
AP

- Ka pūtorutia te tapa o tētahi mataono rite hei tātai i te rōrahi.
- Ka tātaihia te pūtaketoru o te rōrahi o tētahi mataono rite hei tātai i te tapa.

Rauemi

He mataono honohono, he tātaitai.

Te Whakamahi Rauemi

Te Mahi a te Pouako	He Tauria Kōrero mā te Pouako
<p>Tuhia te rapanga ki te papa tuhituhi, ka pānui ai.</p> <p>Whakawhitiwhiti kōrero mō te tātai i te rōrahi o tētahi mataono rite, me te tikanga o te tohu pūtoru ⁽³⁾.</p>	<p>E hia ngā poraka honohono hei hanga i tētahi mataono rite nui, kia 4 ngā poraka ki ia tapa?</p> <p>Hangaia te mataono rite nui ki ngā poraka honohono. E hia ngā paparanga o te mataono rite nui? (E 4.)</p>  <p>E hia ngā poraka kei ia paparanga? (Whakareatia te 4 ki te 4, ka 16 ngā poraka kei ia paparanga.)</p> <p>Nō reira me pēhea te tātai i te katoa o ngā poraka i te mataono rite nui? (Whakareatia te 16 ki te 4, ka 64.)</p> <p>He aha te whārite hei whakaata i ēnei tātaitanga e rua nei? ($4 \times 4 \times 4 = 64$)</p> <p>Arā tētahi atu momo tuhinga mō te $4 \times 4 \times 4$. E pēnei ana: 4^3. Ka kīia, “te pūtoru o te 4”, “pūtorutia te whā”, rānei. Whakamahia tēnei tohu, ka tuhi anō ai i te whārite: $4^3 = 64$.</p>

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Te Whakaahua ā-Hinengaro

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Ārahina ngā ākonga ki te whakaahua ā-hinengaro i te tātaitanga rōrahi o tētahi mataono rite.</p>	<p>Anei anō tētahi rapanga. Me āta whakaahua ā-hinengaro te āhua o te mataono rite nui.</p> <p>Ka hangaia e Wirihana tētahi mataono rite nui, e toru ngā poraka ki ia tapa. E hia katoa ngā poraka?</p> <p>Āta whakaarohia ia paparanga o te mataono rite nui. E hia ngā poraka ki ia paparanga?</p> <p>E hia ngā paparanga?</p> <p>He aha te whārite hei tātai i te maha o ngā poraka? (Pūtorutia te 3, ka $27: 3^3 = 27$.)</p>
<p>Kia pērā anō te mahi nei.</p>	<p>E 2 ngā poraka ki ia tapa o te mataono rite nui. E hia katoa ngā poraka?</p> <p>E 5 ngā poraka ki ia tapa o te mataono rite nui. E hia katoa ngā poraka?</p> <p>Tekau ngā poraka ki ia tapa o te mataono rite nui. E hia katoa ngā poraka?</p>

Te Whakamahi Tikanga Tau

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Ārahina ngā ākonga ki te whakamahi i te pātuhi y^x i ā rātou tātaitai.</p>	<p>Mēnā 89 ngā poraka ki ia tapa o tētahi mataono rite nui, e hia katoa ngā poraka?</p> <p>He aha te whārite? (89^3)</p> <p>Kimihia te pātuhi y^x i ā koutou tātaitai. Me pēhea te whakamahi i tēnei pātuhi hei whakaoti i te 89^3? (Koia nei ngā pātuhi: 89, kātahi ko te y^x, kātahi ko te 3, kātahi ko te = . Ko te 704 969 te otinga.)</p>
<p>Whakamahia te tātaitai hei whakaoti i ēnei rapanga:</p>	
<p>$34 \times 34 \times 34$</p>	<p>45^3</p>
<p>$0.89 \times 0.89 \times 0.89$</p>	<p>67.2^3</p>

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

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Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Ārahina ngā ākonga ki te whakamahi i te tātaitai hei whiriwhiri i te pūtaketoru o tētahi tau.</p>	<p>E 8 000 ngā poraka ka whakamahia e Hēni ki te hanga i tētahi mataono rite nui. E hia ngā poraka ki ia tapa?</p> <p>E kimi ana tātou i te aha? (E kimi ana i te tau, ina pūtorutia taua tau, ka 8 000.)</p> <p>Me pēnei te tuhi i te whārite hei whakaata i tēnei tātaitanga: $\sqrt[3]{8\ 000}$. Ko te kupu mō tēnei tohu, ko te pūtaketoru. He aha te pūtaketoru o te 8 000?</p> <p>Tirohia te tātaitai. Me pēhea te whakamahi i te pātuhi $\sqrt[x]{y}$ hei tātai i te $\sqrt[3]{8\ 000}$?</p> <p>(Koia nei ngā pātuhi: 8 000, kātahi ko te $\sqrt[x]{y}$, kātahi ko te 3, kātahi ko te =. Ko te 20 te otinga.)</p>
<p>Whakamahia te tātaitai hei whakaoti i ēnei rapanga:</p> <p style="text-align: center;"> $\sqrt[3]{27}$ $\sqrt[3]{64}$ $\sqrt[3]{125}$ $\sqrt[3]{798}$ $\sqrt[3]{1\ 000}$ $\sqrt[3]{468.3}$ </p>	

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Te Tau Tōraro me te Tangohanga

E ako ana ahau ki te whakamahi tau tōraro ki te whakaoti tangohanga.

Te Whakamahi Tikanga Tau

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Tuhia te rapanga ki te papa tuhituhi ka pānui ai.</p> <p>Whakawhitiwhiti kōrero mō te whakamahi i te tau tōraro hei whakaoti tangohanga.</p>	<p>E \$3 kei te pūtea pēke a Hoani. Ka tangohia e ia te \$7. He aha te tapeke i nāiane i o tana pūtea? (E noho nama ana ia ki te pēke. E \$4 te tuhene.)</p> <p>He aha te whārite hei whakaata i tēnei tangohanga? ($3 - 7 = -4$)</p> <p>Ka whakamahia e Hoani tēnei rautaki ki te whakaoti i ngā tangohanga pēnei i te $73 - 27$. Tuatahi ka tangohia te 7 i te 3, ka 4 tōraro (-4). Tuarua, ka tangohia te 20 i te 70, ka 50. Kātahi ka whakahuihui i te -4 me te 50, ka 46.</p> $\begin{array}{r} 73 \\ - 27 \\ \hline - 4 \\ 50 \\ \hline 46 \end{array}$
<p>Whakamahia te rautaki a Hoani ki te whakaoti i ngā tangohanga nei.</p> <p>68 – 49 58 – 28 41 – 23 91 – 78 423 – 157 345 – 189</p> <p>4 520 – 5 170</p>	

He Pātai Aromatawai

Whakamāramatia mai he aha e kore ai e whai wāhi mai he tau tōraro ki te rautaki a Hoani mō ētahi tangohanga.

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

EA

AA

E Hia Ka Toe Mai?

AM

E ako ana ahau ki te tātai i te toenga o tētahi wehenga mā te whakamahi tātaitai.

AP

Rauemi

He tātaitai.

Te Whakamahi Tikanga Tau

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Tuhia te rapanga ki te papa tuhituhi ka pānui ai.</p> <p>Ārahina ngā ākonga ki te whiriwhiri i te toenga i muri i te wehenga.</p>	<p>254 ngā kāri a Roimata. Ka tohaina ēnei kāri ki ōna hoa tokotoru kia ōrite te maha ki tēnā, ki tēnā. E hia ngā kāri ka toe mai?</p> <p>He aha te whārite hei whakaata i tēnei rapanga? ($254 \div 3$)</p> <p>Whakamahia te tātaitai. He aha te otinga? (84.66666)</p> <p>E hia ngā kāri ka tohaina ki ia tangata? (84.)</p> <p>E tohu ana te .66666 i te toenga. He aha te tikanga o te .66666? (Koirā te hautanga o te toru e toe mai ana. He ōrite te .66666 ki te rua hautoru [$\frac{2}{3}$]. Nō reira, e rua ngā kāri e toe mai ana.)</p>
<p>Kia pērā anō te whiriwhiri i te toenga mō ēnei wehenga:</p> <p>124 \div 3 12 789 \div 2 10 334 \div 3 1 347 \div 4 233 \div 5</p>	

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Te Mahi a te Pouako	He Taura Kōrero mā te Pouako
<p>Tuhia te rapanga ki te papa tuhituhi ka pānui ai. Ārahina ngā ākongā ki te whiriwhiri i te toenga i muri i te wehenga.</p>	<p>5 673 ngā rare, ka takaitia kia 34 ngā rare ki ia takai. E hia ngā rare e toe mai ana? He aha te whārite? ($5\ 673 \div 34$) He aha te otinga ki te tātai? (166.8529412) Nō reira, e hia katoa ngā takai? (166.) Me pēhea te tātai i te maha o ngā rare kei roto i aua takai 166? (Whakareatia te 166 ki te 34, nā te mea 34 ngā rare ki ia takai. Ka 5 644.) Nō reira me pēhea te tātai i te maha o ngā rare e toe mai ana? (Tangohia te maha o ngā rare kei roto i ngā takai [5 644] i te maha o ngā rare i te tīmatanga [5 673]: $5\ 673 - 5\ 644 = 29$. Nō reira, 29 ngā rare e toe mai ana.)</p>
<p>Tātaihia te toenga i muri i ngā wehenga nei:</p> <p>10 344 ÷ 27 11 327 ÷ 67 123 833 ÷ 27 62 789 ÷ 967</p> <p>345 810 ÷ 1 614</p>	

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

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Te Whakamahi Toenga

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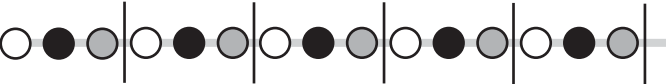
E ako ana ahau ki te whakamahi toenga ki te whakaoti rapanga tauira.

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Rauemi

He pirepire, ko te iti rawa kia toru ngā tae rerekē.

Te Whakamahi Tikanga Tau

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Tuhia te rapanga ki te papa tuhituhi, ka pānui ai.</p>	<p>Ka hangaia e Mikaere he tauira pirepire ki tētahi aho. E toru ngā tae o ngā pirepire. Ko te mā, te pango, te whero te raupapa mai o ngā pirepire, haere ake nei, haere ake nei.</p>  <p>Ka haere tonu tana hanga i te tauira, kia pau rā anō āna pirepire 103 katoa. He aha te tae o te pirepire whakamutunga? (E toru ngā pirepire hei hanga i te tauira, mā, pango, whero. Nō reira, wehea te 103 ki te 3, ka 34, kotahi ka toe mai. E 34 ngā rōpū o te toru. He mā te porotiti kotahi e toe mai ana nā te mea koirā te tae tuatahi o te tauira.)</p> <p>He aha te tae o te porotiti whakamutunga mēnā 104 ngā porotiti o te tauira? (E rua ngā porotiti e toe mai ana, nō reira he pango te porotiti whakamutunga nā te mea koirā te tae tuarua o te tauira.)</p> <p>He aha te tae o te porotiti whakamutunga mēnā 105 ngā porotiti o te tauira? (Kāore he porotiti e toe mai ana, nō reira he whero te pirepire whakamutunga nā te mea koirā te tae tuatoru o te tauira.)</p>
<p>Whiriwhiria te tae o te pirepire whakamutunga mēnā 56 katoa ngā pirepire. Whiriwhiria te tae o te pirepire whakamutunga mēnā 123 katoa ngā pirepire. Whiriwhiria te tae o te pirepire whakamutunga mēnā 678 katoa ngā pirepire. Whiriwhiria te tae o te pirepire whakamutunga mēnā 828 katoa ngā pirepire. Whiriwhiria te tae o te pirepire whakamutunga mēnā 8 987 katoa ngā pirepire.</p>	

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He Pātai Aromatawai

Tuhia he rapanga tauira pirepire pēnei i te mea i runga nei, engari kia nui ake i te 10 000 te maha o ngā pirepire. Whakaotia te rapanga.

He rapanga atu anō:

Ka hangaia e Mikaere he tauira pirepire, e whā ngā tae o ngā pirepire. Ko A, E, I, O hei tohu i ngā tae nō reira e pēnei ana te tauira:

AEIOAEIOAEIOAEIO ... He aha te tae o te pirepire nama 45 679? (Ka whakamahia te tātaitai ki te whakawehe i te 45 679 ki te 4, ka 11 419.75. He ōrite te 0.75 ki te toru hauwhā. Nō reira ko te / hei tohu i te tae tuatoru o te tauira.)

Kia pērā anō te rapanga mēnā koinei te maha o ngā pirepire:

5 489 12 788 823 451 34 500 28 987

He rapanga atu anō:

Ka timata te tatau a Henare i ngā hāora ka hipa i te 12.00. E tohu ana te ringa hāora (ringa poto) o te karaka ki hea i te paunga o te 12 345 hāora?

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

EA

AA

He Tau Toitū

AM

E ako ana ahau i te tikanga nei:

AP

Mēnā he tapawhā hāngai te āhua o te whakatakoto papariki, kotahi anake te whakatakotoranga mō ngā tau toitū e taea ana, engari he nui ake i te kotahi ngā whakatakotoranga e taea ana mō ngā tau toitū-kore.

Rauemi

He papariki, he kāri tapawhā rite.

Te Whakamahi Rauemi

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Tuhia te rapanga ki te papa tuhituhi, ka pānui ai.</p> <p>Whakamahia he papariki, he kāri rānei ki te tūhura i te rapanga.</p>	<p>E ono ngā papariki a Matahiwi. Ka whakatakotoria e ia ēnei papariki, kia puta he tapawhā hāngai. E hia ngā whakatakotoranga rerekē e taea ana? (Ko te 6 mā te 1, me te 3 mā te 2 ngā whakatakotoranga e rua e taea ana.)</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; width: 150px; height: 20px; margin: 5px;"></div> <div style="border: 1px solid black; width: 60px; height: 40px; margin: 5px;"></div> </div>
<p>Kia pērā anō te tūhura i te whakatakoto i ngā papariki e 7.</p>	<p>E hia ngā whakatakotoranga rerekē e taea ana mēnā e whitu katoa ngā papariki, ā, he tapawhā hāngai te āhua ka puta mai. (Kotahi anake te whakatakotoranga e taea ana – ko te 7 mā te 1.)</p> <div style="border: 1px solid black; width: 150px; height: 20px; margin: 10px auto;"></div>
<p>Whakamāramatia tēnei āhuatanga o te tau toitū.</p>	<p>Mēnā kotahi anake te whakatakotoranga o ngā papariki e taea ana, he momo tau motuhake tēnā. Ka kīia he tau toitū. He aha te tikanga o te tau toitū? (Ko te 1 me te tau toitū ngā taurea, koia anake.)</p>
<p>Whakamahia ngā kāri, papariki rānei ki te whakatau mēnā he tau toitū ēnei tau, kāore rānei:</p> <p>5 8 11 9 15 13 16</p>	

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He Pātai Aromatawai

1. Whakamāramatia mai he aha te take ko te 2 anake te taurua toitū.
2. He tau toitū te 7 nā te mea ko te 1 me te 7 anake ngā tauwehe. Ko te 1, te 2, te 3, me te 6 ngā tauwehe o te 6, nō reira ehara te 6 i te tau toitū.

Whakaotia tēnei ture:

Ki te whiriwhiria ngā tauwehe katoa o tētahi tau, he tau toitū mēnā ...

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

EA

AA

Te Whakamātau Wehenga

AM

E ako ana ahau ki te whiriwhiri mēnā e taea ana tētahi tau te whakawehe ki tētahi atu tau.

AP

Rauemi

He paparau, Whārangi Tārua 8–24.

Te Whakamahi Tikanga Tau

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Tuhia te rapanga ki te papa tuhutuhi, ka pānui ai.</p> <p>Whakawhitiwhiti kōrero mō te wehenga o tētahi tau ki te rua.</p>	<p>23 ngā kāri a Hakopa. E whakaaro ana ia mēnā ka taea ngā kāri nei te tohatoha ki ōna hoa tokorua, kāore he toenga. He aha tāna whiriwhiri?</p> <p>(Ka wehea te 23 ki te 2.</p> $2 \times 11 = 22$ $2 \times 12 = 24$ <p>Kei waenganui te 23 i te 22 me te 24, nō reira kāore e taea te 23 te wehe pū ki te 2. Kotahi te toenga.)</p> <p>He aha tātou e mōhio ai mēnā ka taea tētahi tau te wehe pū ki te 2, kāore he toenga? (Me he taurua te tau, ka taea te wehe pū ki te 2, kāore he toenga. Kāore e taea te taukehe te wehe pū ki te 2 – kotahi te toenga i ngā wā katoa.)</p>
<p>Whakawhitiwhiti kōrero mō te wehenga o tētahi tau ki te rima.</p>	<p>Titiro ki te paparau. Ka rārangihia ngā taurea o te rima. Arā, te 5, te 10, te 15, haere ake, haere ake.</p> <p>Katoa ēnei tau, ka taea te wehe pū ki te 5, kāore he toenga. E kitea ana ētahi atu tau i te paparau e taea ana te wehe pū ki te 5, kāore he toenga? (Kāore.)</p> <p>He aha ngā tau nui ake i te 100 ka taea te wehe pū ki te 5, kāore he toenga? (Ko te 105, te 110, te 115 ...)</p> <p>He aha tātou e mōhio ai mēnā ka taea tētahi tau te wehe pū ki te 5, kāore he toenga? (Ko te 0, te 5 rānei te mati whakamutunga.)</p>

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Te Mahi a te Pouako	He Taura Kōrero mā te Pouako						
<p>Whakawhitiwhiti kōrero mō te wehenga o tētahi tau ki te whā.</p>	<p>Kotahi rau ngā kāri a Hakopa. E whakaaro ana ia mēnā ka taea ngā kāri nei te tohatoha ki ōna hoa tokowhā, kāore he toenga. He aha tāna whiriwhiringa? (Ka kimihia tētahi tau, mēnā ka whakareatia taua tau ki te 4, ko te 100 te otinga. Arā, $\square \times 4 = 100$. Ko te 25.)</p> <p>Pēhea mēnā 200, 300, 400, 700 te maha o āna kari? Ka taea tonu te tohatoha ki ōna hoa tokowhā, kāore he toenga? (Āe. Ahakoa te maha o ngā rau, ka taea tonu te wehe pū ki te 4, nā te mea ka taea te 100.)</p> <p>Pēhea te 34 984? Ka taea te wehe pū ki te 4, kāore he toenga? (Tuatahi ka tirohia ngā rau – 34 900. Ka taea te 34 900 te wehe pū ki te 4. 84 ka toe mai. Ka taea hoki te 84 te wehe pū ki te 4: $21 \times 4 = 84$. Nō reira, ka taea te 34 984 te wehe pū ki te 4.)</p>						
<p>Āta whiriwhiri mēnā ka taea ēnei tau te wehe pū ki te 4, kāore he toenga.</p>	<table border="0"> <tr> <td>232</td> <td>2 002</td> <td>45 638</td> </tr> <tr> <td>1 295 904</td> <td>180 008</td> <td></td> </tr> </table>	232	2 002	45 638	1 295 904	180 008	
232	2 002	45 638					
1 295 904	180 008						
<p>Whakawhitiwhiti kōrero mō te wehenga o tētahi tau ki te iwa.</p>	<p>E ai ki a Roimata mēnā ka tāpirihia ngā mati o tētahi tau, ā, ka taea te tapeke o ngā mati te wehe pū ki te 9, kātahi koe ka mōhio ka taea taua tau te wehe pū ki te 9, kāore he toenga. Whakamātauria tēnei whakatau a Roimata.</p> <p>252 (Ko te 9 te tapeke o ngā mati: $2 + 5 + 2$. Ka taea te 9 te wehe pū ki te 9, nō reira ka taea hoki te 252: $252 \div 9 = 28$.)</p>						

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

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Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
	<p>3 672 (Ko te 18 te tapeke o ngā mati: $3 + 6 + 7 + 2$. Ka taea te 18 te wehe pū ki te 9, nō reira ka taea hoki te 3672: $3\ 672 \div 9 = 408$.)</p> <p>48 215 (Ko te 20 te tapeke o ngā mati: $4 + 8 + 2 + 1 + 5$. Kāore e taea te 20 te wehe pū ki te 9, nō reira kāore hoki e taea te 48 215: $48\ 215 \div 9 = 5\ 357.2222'$.)</p>
<p>Kia pērā anō te whakamātau i te wehenga o tētahi tau ki te 3. Arā, mēnā ka taea te tapeke o ngā mati te wehe pū ki te 3, kātahi koe ka mōhio ka taea taua tau te wehe pū ki te 3, kāore he toenga.</p>	
<p>Hoatu te Whārangi Tārua 8–24 hei mahi mā ngā ākonga.</p>	

He Pātai Aromatawai

Whakamāramatia mai tētahi whakamātau kia mōhiohia ai mēnā ka taea tētahi tau te wehe pū ki te 36, kāore he toenga.

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He Hoahoa Rākau Tauwehe

E ako ana ahau ki te whakamahi hoahoa rākau tauwehe ki te whiriwhiri i ngā tauwehe toitū o tētahi tau.

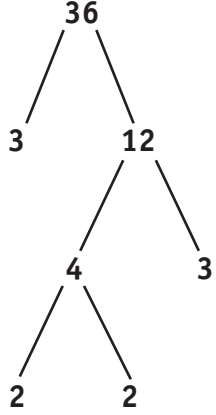
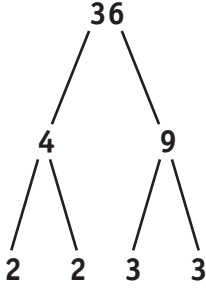
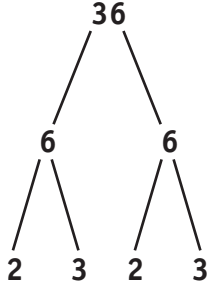
Te Whakamahi Tikanga Tau

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Whakaaturia tētahi hoahoa rākau tauwehe, ka whakamārama ai.</p>	<p>Titiro ki te hoahoa nei. Ka tīmata i te 36. Ko te 2 me te 18 ētahi tauwehe. Ka wehea te 18 ki te 9 me te 2. Ka wehea te 9 ki te 3 me te 3.</p> <div style="text-align: center;"> <pre> graph TD 36 --- 2 36 --- 18 18 --- 9 18 --- 2 9 --- 3 9 --- 3 </pre> </div> <p>Ko te 2, te 3, te 3, me te 2 ngā tau whakamutunga o te hoahoa rākau nei. Katoa ēnei tau, he tau toitū. Mēnā ka whakareatia ēnei tau toitū nei ko te 36 te otinga ($2 \times 3 \times 3 \times 2 = 36$). Ka kīia tēnei momo hoahoa rākau, he hoahoa rākau tauwehe, nā te mea ka kitea ngā tauwehe toitū o te tau tīmatanga.</p>
<p>Whakawhitiwhiti kōrero mō ngā hoahoa rākau tauwehe o te 36.</p>	<p>Mō tēnei hoahoa rākau tauwehe, ko te 2 me te 18 ngā tauwehe tuatahi. He aha ētahi atu tauwehe o te 36? (Ko te 3×12, ko te 4×9, ko te 6×6 rānei.)</p>

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

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Te Mahi a te Pouako	He Taura Kōrero mā te Pouako
	<p>Mēnā ka tīmata ki ētahi atu tauwehe, he aha te otinga o te hoahoa rākau tauwehe?</p> <div style="text-align: center;">  </div> <div style="display: flex; justify-content: space-around; margin-top: 20px;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> </div> <p>Ko te otinga o ēnei hoahoa rākau tauwehe katoa, ko te 2, te 2, te 3, me te 3. Koia rā ngā tauwehe toitū o te 36. Ahakoa tīmata ki hea, ko te otinga tonu, ko ngā tauwehe toitū. Ka taea te whakamahi taipū hei whakaatu i ngā tauwehe toitū o te 36. Arā, $2^2 \times 3^2$ ($2 \times 2 \times 3 \times 3 = 36$).</p>
<p>Kia pērā anō te ārahi i ngā ākongā ki te tuhi hoahoa rākau tauwehe mō ēnei tau:</p> <p>24 30 144 180 120 1 000</p>	

He Pātai Aromatawai

Kōwhiria tētahi tau nui ake i te 150. Kimihia ōna tauwehe toitū.

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Te Tāpiri Raupapatanga Tau

E ako ana ahau i tētahi rautaki ki te tāpiri i tētahi raupapatanga tau.

Rauemi

Kia 2 ngā huinga kāri, kua tuhia ngā tau 1 ki te 20 ki runga.

Te Whakamahi Rauemi

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Kōrerohia te paki nei mō te kaipāngarau rongonui a Gauss.</p>	<p>Tērā tētahi tohunga pāngarau nō Tiamana, ko Carl Fredrick Gauss tōna ingoa. I te wā e rima tau tōna pakeke, ka tonoa ia ki te tāpiri i ngā tau katoa mai i te 0 ki te 100.</p> <p>Arā, $1 + 2 + 3 + 4 + 5 + 6 + 7 \dots + 99 + 100$.</p> <p>He tere tana whakautu, kāore he tiro tiro, kāore he rakuraku i te mahunga, ko te 5050.</p> <p>He aha te rautaki i whāia e Gauss ki te tāpiri i tēnei raupapatanga tau? Kia āta tiro tirohia:</p> <p>Anei ngā kāri, 1 ki te 10. He aha te tapeke o ēnei tau?</p> <div style="display: flex; justify-content: center; gap: 10px;"> <div style="border: 1px solid black; padding: 2px 10px;">1</div> <div style="border: 1px solid black; padding: 2px 10px;">2</div> <div style="border: 1px solid black; padding: 2px 10px;">3</div> <div style="border: 1px solid black; padding: 2px 10px;">4</div> <div style="border: 1px solid black; padding: 2px 10px;">5</div> <div style="border: 1px solid black; padding: 2px 10px;">6</div> <div style="border: 1px solid black; padding: 2px 10px;">7</div> <div style="border: 1px solid black; padding: 2px 10px;">8</div> <div style="border: 1px solid black; padding: 2px 10px;">9</div> <div style="border: 1px solid black; padding: 2px 10px;">10</div> </div> <p style="text-align: center;">Ka taea te whakatakoto kia pēnei:</p> <div style="display: flex; justify-content: center; gap: 20px; margin: 10px 0;"> <div style="border: 1px solid black; padding: 5px 10px;">1</div> <div style="border: 1px solid black; padding: 5px 10px;">2</div> <div style="border: 1px solid black; padding: 5px 10px;">3</div> <div style="border: 1px solid black; padding: 5px 10px;">4</div> <div style="border: 1px solid black; padding: 5px 10px;">5</div> </div> <div style="display: flex; justify-content: center; gap: 20px;"> <div style="border: 1px solid black; padding: 5px 10px;">10</div> <div style="border: 1px solid black; padding: 5px 10px;">9</div> <div style="border: 1px solid black; padding: 5px 10px;">8</div> <div style="border: 1px solid black; padding: 5px 10px;">7</div> <div style="border: 1px solid black; padding: 5px 10px;">6</div> </div>

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

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Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako															
	<p>Tāpirihia ia takirua kāri, arā, 1 me te 10, 2 me te 9 ... Ko te 11 te tapeke o ia takirua kāri:</p> <table border="1"><tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr><tr><td>10</td><td>9</td><td>8</td><td>7</td><td>6</td></tr><tr><td>11</td><td>11</td><td>11</td><td>11</td><td>11</td></tr></table> <p>E rima ngā takirua kāri, nō reira ko te tapeke o ngā kāri katoa, ko te $11 \times 5 = 55$.</p>	1	2	3	4	5	10	9	8	7	6	11	11	11	11	11
1	2	3	4	5												
10	9	8	7	6												
11	11	11	11	11												
<p>Kia pērā anō te mahi mō ngā raupapatanga tau nei:</p> <table><tr><td>1 ki te 8</td><td>1 ki te 12</td><td>1 ki te 14</td><td>1 ki te 100</td></tr><tr><td>1 ki te 1 000</td><td>1 ki te 46</td><td>1 ki te 88</td><td></td></tr></table>	1 ki te 8	1 ki te 12	1 ki te 14	1 ki te 100	1 ki te 1 000	1 ki te 46	1 ki te 88									
1 ki te 8	1 ki te 12	1 ki te 14	1 ki te 100													
1 ki te 1 000	1 ki te 46	1 ki te 88														

He Pātai Aromatawai

Whiriwhiria te ture hei tātai i te tapeke o tētahi raupapatanga tau $1 + 2 + 3 + 4 + \dots + 2n$.

Ko te $n(2n + 1)$.

Te Wāhanga 6

Te Kaupae 8: Te Wāwāhi Tau Pānga Riterite

Ngā Ngohe i Pukapuka Kē

Te Ngohe	Te Pukapuka	Te Whāinga Ako
Te Whakaū Piro Hot Shots	Pukapuka Tuawhitu Whārangī 44–48	Kei te ako au ki te tātai i te ōrau o tētahi rahinga.
Te Whakaranu Tae Mixing Colours	Pukapuka Tuawhitu Whārangī 48–52	Kei te ako au ki te whakatairite ōwehenga, hautanga hoki.
Te Whētui Hautau me te Tau ā-Ira Folding Fractions and Decimals	Pukapuka Tuawhitu Whārangī 52–54	Kei te ako au ki te whakarea hautau, tau ā-ira hoki.

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Ngā Ngohe Hou

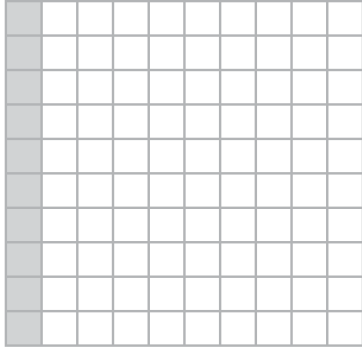
Te Whakarea Hautanga ā-Ira

E ako ana ahau ki te whakarea hautanga ā-ira mā te whiriwhiri i te horahanga tapawhā hāngai.

Rauemi

He pepa tukutuku 10 mā te 10, Whārangī Tārua 8–34.

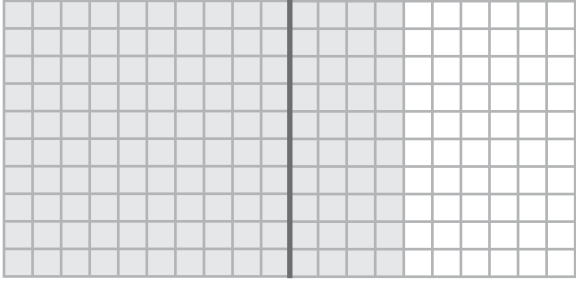
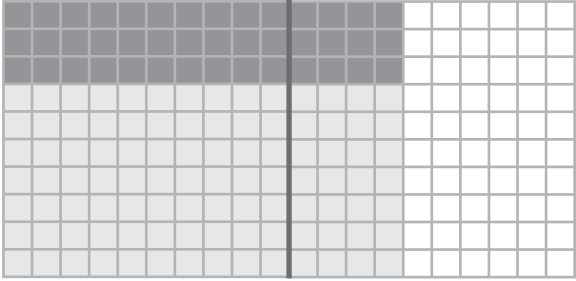
Te Whakamahi Rauemi

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
Hoki whakamuri ki te wānanga i te rahi o te 0.1 me te 0.01, me te whakaatu i te 0.1 me te 0.01 ki te tukutuku.	<p>Titiro ki te tukutuku nei. Kaurukutia te kotahi hautekau o tēnei tukutuku.</p>  <p>He aha te hautau e tika ana mō tētahi o ngā tapawhā rite iti? (Ko te kotahi haurau, te 0.01 rānei.)</p>

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

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Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako						
<p>Whakawhitiwhiti kōrero mō te whakatauirā whakareatanga tau ā-ira ki tētahi tukutuku.</p>	<p>Whakamahia ngā tukutuku ka whakaatu mai ai i te 1.4. Kaurukutia te 1.4 ki ētahi tukutuku.</p>  <p>I nāianei, kaurukutia te 0.3 o taua 1.4.</p>  <p>He aha te whakareatanga e whakaaturia ana ki ngā tukutuku kauruku nei? (Ko te 0.3 o te 1.4. Arā, ko te whakareatanga 0.3×1.4.)</p> <p>He aha te otinga o te whakareatanga? E hia ngā haurau, ngā ira kore tahi (0.01) rānei e kaurukutia ana? (42 ngā haurau, arā, te 0.42.)</p> <p>Tuhia te whārite: $0.3 \times 1.4 = 0.42$</p>						
<p>Kia pērā anō te mahi mō ngā whakareatanga nei. Whakatauiratia ki ngā tukutuku.</p>	<table> <tr> <td>1.2×0.2</td> <td>1.6×0.7</td> <td>0.8×0.6</td> </tr> <tr> <td>1.2×1.2</td> <td>0.9×0.8</td> <td>1.2×1.1</td> </tr> </table>	1.2×0.2	1.6×0.7	0.8×0.6	1.2×1.2	0.9×0.8	1.2×1.1
1.2×0.2	1.6×0.7	0.8×0.6					
1.2×1.2	0.9×0.8	1.2×1.1					

EA

AA

AM

AP

Te Whakamahi Tikanga Tau

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako	
Tuhia te rapanga ki te papa tuhituhi, ka pānui ai.	<p>Kua hapa te tātaitai a Pāora. Kāore e whakaaturia ana te ira ki ngā otinga ka puta i tana tātaitai. Arā, e tika ana ngā mati engari kua ngaro te ira. Ka puta te otinga o te whakareatanga 3.2×1.7, ko te 544. Ki hea te wāhi tika hei tuhi i te ira?</p> <p>(E tika ana kia whakatau tata i te otinga. Whakaawhiwhia ngā tau e rua ki raro, arā, ko te $3 \times 1 = 3$.</p> <p>Whakaawhiwhia ngā tau e rua ki runga, arā, ko te $4 \times 2 = 8$.</p> <p>Nō reira e mōhiohia ana kei waenganui i te 3 me te 8 te otinga tōtika. Me tuhi atu te ira ki waenganui i te 5 me te 4, arā, ko te 5.44 te otinga.)</p>	
Whakatau tata i te otinga o ngā whakareatanga me ngā wehenga nei, kātahi ka tuhi i te ira ki te wāhi e tika ana.		
$9.789 \times 0.12 = 117468$	$10.11 \times 9.9 = 100089$	$4.9 \times 0.51 = 2499$
$78.6 \div 0.88 = 893181818$	$6.76 \div 0.026 = 26$	$2.5 \times 2.5 = 625$

He Pātai Aromatawai

Whakamāramatia mai te rautaki hei whiriwhiri i te wāhi tika mō te ira ki ngā whārite e rua nei:

- $234.567 \div 24.987$
- 0.0123×678.34

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

EA

AA

He Tikanga Tuhi i ngā Tau Nui

AM

E ako ana ahau i te tikanga o te tānga ngahuru hei tuhi i ngā tau nui.

AP

E ako ana ahau ki te whakarea i ngā tau nui kua tuhia hei tānga ngahuru.

Te Whakamahi Tikanga Tau

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
E hoki ki te wānanga anō i te tikanga o ngā taupūtanga o te tekau.	He aha te tikanga o te tuhinga nei, te 10^2 (te pūrua o te 10)? (Kia rua ngā whakareatanga o te 10 ki te 10. Arā, $10 \times 10 = 100$.) Pēhea te 10^3 ? (Kia toru ngā whakareatanga o te 10 ki te 10. Arā, $10 \times 10 \times 10 = 1\ 000$.) He aha te pūwhā o te 10? Tuhia hei whārite. ($10^4 = 10 \times 10 \times 10 \times 10 = 10\ 000$.)
Whakawhitiwhiti kōrero mō te tauira e kitea mai ana i ngā taupūtanga o te 10.	Tirohia ngā taupūtanga o te tekau: $10^2 = 100$ $10^3 = 1\ 000$ $10^4 = 10\ 000$ $10^5 = 100\ 000$ He aha te pūono o te 10? (Ko te 1 000 000.) He aha te tauira e kitea mai ana? (Ko te taupū o te 10 hei tohu i te maha o ngā kore i te otinga. Arā, mēnā ko te pūtoru, e toru ngā kore. Mēnā ko te pūwhā, e whā ngā kore.) He aha te pūiwa o te 10? (Ko te 1 000 000 000.)

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

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Te Mahi a te Pouako	He Taurira Kōrero mā te Pouako						
Whakaaturia te tikanga o te whakarea i tētahi taupūtanga o te 10 ki tētahi.	<p>Me pēhea te tuhi i te roanga atu o tēnei whakareatanga:</p> $10^2 \times 10^3$ $\underbrace{(10 \times 10 \times 10)}_{10^2} \times \underbrace{(10 \times 10 \times 10)}_{10^3}$ <p>Nō reira, ko te 10^5 te otinga o te $10^2 \times 10^3$.</p>						
Hoatu ētahi whakareatanga hei whakaoti mā ngā ākongā.	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">$10^2 \times 10^4$</td> <td style="width: 50%;">$10^2 \times 10^2$</td> </tr> <tr> <td>$10^3 \times 10^4$</td> <td>$10^5 \times 10^2$</td> </tr> <tr> <td>$10^4 \times 10^5$</td> <td>$10^3 \times 10^5$</td> </tr> </table>	$10^2 \times 10^4$	$10^2 \times 10^2$	$10^3 \times 10^4$	$10^5 \times 10^2$	$10^4 \times 10^5$	$10^3 \times 10^5$
$10^2 \times 10^4$	$10^2 \times 10^2$						
$10^3 \times 10^4$	$10^5 \times 10^2$						
$10^4 \times 10^5$	$10^3 \times 10^5$						
Whakawhitiwhiti kōrero mō te taurira e kitea mai ana i ngā whakareatanga o ngā taupūtanga o te 10.	<p>Titiro ki ngā otinga o ngā whakareatanga o ngā taupūtanga o te 10.</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">$10^2 \times 10^4 = 10^6$</td> <td style="width: 50%;">$10^2 \times 10^2 = 10^4$</td> </tr> <tr> <td>$10^3 \times 10^4 = 10^7$</td> <td>$10^5 \times 10^2 = 10^7$</td> </tr> <tr> <td>$10^4 \times 10^5 = 10^9$</td> <td>$10^3 \times 10^5 = 10^8$</td> </tr> </table> <p>He aha te taurira e kitea mai ana? (Tāpirihia ngā taupūtanga o te 10.)</p>	$10^2 \times 10^4 = 10^6$	$10^2 \times 10^2 = 10^4$	$10^3 \times 10^4 = 10^7$	$10^5 \times 10^2 = 10^7$	$10^4 \times 10^5 = 10^9$	$10^3 \times 10^5 = 10^8$
$10^2 \times 10^4 = 10^6$	$10^2 \times 10^2 = 10^4$						
$10^3 \times 10^4 = 10^7$	$10^5 \times 10^2 = 10^7$						
$10^4 \times 10^5 = 10^9$	$10^3 \times 10^5 = 10^8$						
Hoatu ētahi whakareatanga hei whakaoti mā ngā ākongā.	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">$10^2 \times 10^6$</td> <td style="width: 50%;">$10^6 \times 10^8$</td> </tr> <tr> <td>$10^{12} \times 10^4$</td> <td>$10^{23} \times 10^2$</td> </tr> <tr> <td>$10^{13} \times 10^5$</td> <td>$10^{32} \times 10^{51}$</td> </tr> </table>	$10^2 \times 10^6$	$10^6 \times 10^8$	$10^{12} \times 10^4$	$10^{23} \times 10^2$	$10^{13} \times 10^5$	$10^{32} \times 10^{51}$
$10^2 \times 10^6$	$10^6 \times 10^8$						
$10^{12} \times 10^4$	$10^{23} \times 10^2$						
$10^{13} \times 10^5$	$10^{32} \times 10^{51}$						

He Pātai Aromatawai

Ko te m me te n hei tohu i ētahi tau i te whārite nei.

Whakaotia te whārite:

$$10^m \times 10^n = \square$$

$$(10^m \times 10^n = 10^{m+n})$$

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

EA

AA **Te Tauwehe Pātahi Nui Rawa Atu**

AM

E ako ana ahau ki te whiriwhiri i te tauwehe pātahi nui rawa atu o ētahi tau.

AP

Te Whakamahi Tikanga Tau

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Tuhia te rapanga ki te papa tuhituhi, ka pānui ai.</p> <p>Whakawhitiwhiti kōrero mō te kimi i ngā tauwehe pātahi o ētahi tau.</p>	<p>Kua hokona e Haki, e Taki, e Raki ētahi pākete rare. He ōrite te maha o ngā rare kei ia pākete. Tekau mā rua katoa ngā rare kei ngā pākete a Haki. Tekau mā rima katoa ngā rare kei ngā pākete a Taki. E 9 katoa ngā rare kei ngā pākete a Raki. E hia ngā rare kei ia pākete? (He nui ake i te kotahi.)</p> <p>(Ko te maha o ngā rare kei ia pākete, he tauwehe o te 9, te 12 me te 15. E toru ngā rare kei ia pākete, nā te mea he tauwehe te 3 o te 9, o te 12 me te 15. E whā ngā pākete a Haki – $3 \times 4 = 12$; e rima ngā pākete a Taki – $3 \times 5 = 15$; e toru ngā pākete a Raki – $3 \times 3 = 9$.)</p>
<p>Kia pērā anō te whakawhitiwhiti kōrero mō te kimi i ngā tauwehe pātahi o te 60, te 40 me te 48.</p>	<p>Kua hokona e Haki, e Taki, e Raki ētahi pākete rare. He ōrite te maha o ngā rare kei ia pākete. 60 katoa ngā rare kei ngā pākete a Haki. 40 katoa ngā rare kei ngā pākete a Taki. 48 katoa ngā rare kei ngā pākete a Raki. E hia ngā rare kei ia pākete? (He nui ake i te kotahi.)</p> <p>(He taurea te 60, te 40, me te 48 o te maha o ngā rare kei te pākete kotahi. Nō reira ka kimihia ngā tauwehe pātahi o ēnei tau.</p> <p>Ko ngā tauwehe o te 60: {1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30, 60}</p> <p>Ko ngā tauwehe o te 40: {1, 2, 4, 5, 8, 10, 20, 40}</p> <p>Ko ngā tauwehe o te 48: {1, 2, 3, 4, 6, 8, 12, 16, 24, 48}</p> <p>Ko ngā tauwehe pātahi o ēnei tau e toru: {1, 2, 4}</p>

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Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako						
	<p>Nō reira, e 2, e 4 rānei te maha o ngā rare kei ia pākete. Ko te 4 te maha rawa atu o ngā rare e taea ana. Ka kīia ko te 4 te tauwehe pātahi nui rawa atu o te 60, te 40, me te 48.)</p>						
<p>Kia pērā te kimi i te tauwehe pātahi nui rawa atu o ēnei tau.</p>	<table border="0"> <tr> <td>54, 36, me 24</td> <td>36, 72, me 24</td> </tr> <tr> <td>50, 80, me 45</td> <td>36, 42, me 6 000</td> </tr> <tr> <td>500, 15, me 25</td> <td>21, 54, me 18</td> </tr> </table>	54, 36, me 24	36, 72, me 24	50, 80, me 45	36, 42, me 6 000	500, 15, me 25	21, 54, me 18
54, 36, me 24	36, 72, me 24						
50, 80, me 45	36, 42, me 6 000						
500, 15, me 25	21, 54, me 18						
<p>Ārahina ngā ākonga ki te whakamahi hoahoa rākau tau toitū ki te whiriwhiri i te tauwehe pātahi nui rawa atu o ētahi tau.</p>	<p>E kimi ana a Rāniera i te tauwehe pātahi nui rawa atu o te 372 me te 558. Ka tuhia e ia he hoahoa rākau tawehe toitū mō ēnei tau e rua.</p> <div style="text-align: center;"> </div> <p>He mārama te kite atu, ko te 93 te tauwehe pātahi nui rawa atu o ngā tau e rua nei.</p>						
<p>Tuhia he hoahoa rākau tauwehe toitū hei kimi i te tauwehe pātahi nui rawa atu o ēnei tau.</p>	<table border="0"> <tr> <td>195 me 312</td> <td>312 me 408</td> </tr> <tr> <td>162 me 522</td> <td>208, 130, me 234</td> </tr> <tr> <td>378, 224, me 140</td> <td></td> </tr> </table>	195 me 312	312 me 408	162 me 522	208, 130, me 234	378, 224, me 140	
195 me 312	312 me 408						
162 me 522	208, 130, me 234						
378, 224, me 140							

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

EA

AA

Te Taurea Pātahi Iti Rawa Atu

AM

E ako ana ahau ki te whiriwhiri i te taurea pātahi iti rawa atu o ētahi tau.

AP

Te Whakamahi Tikanga Tau

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako																				
<p>Tuhia te rapanga ki te papa tuhituhi, ka pānui ai.</p> <p>Whakawhitiwhiti kōrero mō te kimi i te taurea pātahi iti rawa atu o etahi tau.</p>	<p>He kaihoko a Hoani rāua ko Huhana. Hāereere haere rāua ki ngā tāone ki te hoko i ā rāua taonga. I te tāone o Te Tihi-o-Maru rāua tahi i te Rāhina. Ia whā rangi ka hoki anō a Hoani ki Te Tihi-o-Maru. Ia ono rangi ka hoki a Huhana ki Te Tihi-o-Maru. E hia rangi i muri mai i te Rāhina ka tae atu anō rāua tahi ki Te Tihi-o-Maru?</p> <p>He aha te tikanga o te tūtohi nei? (E whakaaturia ana ngā rangi i muri mai i te Rāhina ka tae atu anō a Hoani rāua ko Huhana ki Te Tihi-o-Maru.)</p> <table border="1"> <thead> <tr> <th>Hoani</th> <th>4</th> <th>8</th> <th>12</th> <th>16</th> <th>20</th> <th></th> <th></th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <th>Huhana</th> <td>6</td> <td>12</td> <td>18</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>Whakaotia te tūtohi.</p> <p>Mō Hoani, ko ngā taurea o te 4 te maha o ngā rangi e hoki anō ai ia ki Te Tihi-o-Maru.</p> <p>Mō Huhana, ko ngā taurea o te 6 te maha o ngā rangi e hoki anō ai ia ki Te Tihi-o-Maru.</p> <p>He aha ngā taurea pātahi o te 4 me te 6? (Ki te tirohia te tūtohi, ko te 12, ko te 24, ko te 36, haere ake, haere ake. Arā, {12, 24, 36 ...}. Ko te taurea pātahi iti rawa atu ko te 12. Nō reira, 12 ngā rangi i muri i taua Rāhina, ka hoki tuatahi atu a Hoani rāua ko Huhana ki Te Tihi-o-Maru.)</p>	Hoani	4	8	12	16	20					Huhana	6	12	18						
Hoani	4	8	12	16	20																
Huhana	6	12	18																		
<p>Tuhia he tūtohi hei kimi i ngā taurea pātahi o ēnei tau takirua. He aha te taurea pātahi iti rawa?</p>	<p>20 me 12 20 me 25 25 me 10</p> <p>5 me 6 10 me 11</p>																				

EA

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AM

AP

Te Mahi a te Pouako	He Taura Kōrero mā te Pouako																																																															
Whakawhitiwhiti kōrero mō te rautaki poto hei kimi i te taurea pātahi iti rawa o ētahi tau uaua.	<p>E kimi ana a Josie i te taurea pātahi iti rawa o te 51 me te 136. E mōhio ana ia he mahi nui ki te tuhi i ngā taurea o te 51, kātahi ko ngā taurea o te 136, kātahi ka kimi ai i ngā taurea pātahi.</p> <p>Ka tirotiro a Josie i ngā otinga o ngā pātai i runga nei. Ka tuhia ki tētahi tūtohi:</p> <table border="1"> <thead> <tr> <th colspan="2">ngā tau</th> <th>taurea pātahi iti rawa</th> </tr> </thead> <tbody> <tr> <td>4</td> <td>6</td> <td>12</td> </tr> <tr> <td>20</td> <td>12</td> <td>60</td> </tr> <tr> <td>5</td> <td>6</td> <td>30</td> </tr> <tr> <td>6</td> <td>9</td> <td>18</td> </tr> <tr> <td>12</td> <td>18</td> <td>36</td> </tr> <tr> <td>25</td> <td>10</td> <td>50</td> </tr> </tbody> </table> <p>Ka kite ia i tētahi tauira e puta mai ana, ā, ka whakaaturia te tauira ki te tūtohi:</p> <table border="1"> <thead> <tr> <th colspan="2">ngā tau</th> <th>whakareatia ngā tau</th> <th>te tauwehe nui rawa atu o ngā tau</th> <th>wehea te otinga o te whakareatanga ki te tauwehe nui rawa atu</th> <th>taurea pātahi iti rawa</th> </tr> </thead> <tbody> <tr> <td>4</td> <td>6</td> <td>24</td> <td>2</td> <td>$24 \div 2 = 12$</td> <td>12</td> </tr> <tr> <td>20</td> <td>12</td> <td>240</td> <td>4</td> <td>$240 \div 4 = 60$</td> <td>60</td> </tr> <tr> <td>5</td> <td>6</td> <td>30</td> <td>1</td> <td>$30 \div 1 = 30$</td> <td>30</td> </tr> <tr> <td>6</td> <td>9</td> <td>54</td> <td>3</td> <td>$54 \div 3 = 18$</td> <td>18</td> </tr> <tr> <td>12</td> <td>18</td> <td>216</td> <td>6</td> <td>$216 \div 6 = 36$</td> <td>36</td> </tr> <tr> <td>25</td> <td>10</td> <td>250</td> <td>5</td> <td>$250 \div 5 = 50$</td> <td>50</td> </tr> </tbody> </table>	ngā tau		taurea pātahi iti rawa	4	6	12	20	12	60	5	6	30	6	9	18	12	18	36	25	10	50	ngā tau		whakareatia ngā tau	te tauwehe nui rawa atu o ngā tau	wehea te otinga o te whakareatanga ki te tauwehe nui rawa atu	taurea pātahi iti rawa	4	6	24	2	$24 \div 2 = 12$	12	20	12	240	4	$240 \div 4 = 60$	60	5	6	30	1	$30 \div 1 = 30$	30	6	9	54	3	$54 \div 3 = 18$	18	12	18	216	6	$216 \div 6 = 36$	36	25	10	250	5	$250 \div 5 = 50$	50
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Whakamahia te rautaki a Josie ki te whiriwhiri i te taurea pātahi iti rawa atu o ēnei tau takirua.	<table> <tbody> <tr> <td>24 me 36</td> <td>18 me 27</td> </tr> <tr> <td>49 me 112</td> <td>156 me 65</td> </tr> <tr> <td>738 me 615</td> <td>910 me 728</td> </tr> </tbody> </table>	24 me 36	18 me 27	49 me 112	156 me 65	738 me 615	910 me 728																																																									
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Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

EA

AA

Kia Ōrite Ngā Waeine

AM

E ako ana ahau ki te huri i ngā waeine kia ōrite, i mua i te tāpiri, te tango rānei.

AP

Te Whakamahi Tikanga Tau

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
Whakawhiti kōrero mō te tāpiri, te tango rānei i ētahi rahinga mēnā he rerekē te waeine o tēnā me tēnā.	Me pēhea te tāpiri i te \$4.34 me te 108 hēneti? He aha te mahi tuatahi? (E tika ana kia hurihia te 108 hēneti ki te \$1.08 i te tuatahi, kia huri rānei i te \$4.34 ki te 434 hēneti, kātahi ka tāpiri ai: $\$4.34 + \$1.08 = \$5.42$ $434 \text{ hēneti} + 108 \text{ hēneti} = 542 \text{ hēneti.}$ Pēhea te tango i te 80 mitamano mai i te 109 mitarau? (Hurihia kia ōrite ngā waeine i te tuatahi. Arā: $1090 \text{ mm} - 80 \text{ mm} = 1010 \text{ mm},$ $109 \text{ cm} - 8 \text{ cm} = 101 \text{ cm rānei.}$
Whakaotia ngā tāpiritanga me ngā tangohanga nei: $100 \text{ mm} + 1.5 \text{ m}$ $5.6 \text{ kg} - 700 \text{ g}$ $\$4.23 + 367 \text{ hēneti}$ $2540 \text{ mm} + 0.87 \text{ m}$	

EA

AA

AM

AP

Te Tāpiri me te Tango Hautau

E ako ana ahau ki te whiriwhiri i te taurea pātahi iti rawa hei tāpiri, hei tango rānei i ētahi hautau mēnā he rerekē ngā tauraro o ngā hautau.

Rauemi

He wehenga hautau, Whārangi Tārua 8–26.

Te Whakamahi Rauemi

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Ārahina ngā ākonga ki te whakamahi i ngā wehenga hautau ki te whakaoti tāpiritanga, tangohanga hoki.</p>	<p>Whakatauiratia te tāpiritanga nei ki ngā rauemi hautau:</p> $\frac{1}{2} + \frac{1}{6}$ <div style="display: flex; align-items: center; margin: 10px 0;"> <div style="border: 1px solid black; width: 100px; height: 30px; background-color: #cccccc; display: flex; align-items: center; justify-content: center;"> $\frac{1}{2}$ </div> <div style="border: 1px solid black; width: 100px; height: 30px; margin-left: 10px;"></div> </div> <div style="display: flex; align-items: center; margin: 10px 0;"> <div style="border: 1px solid black; width: 30px; height: 30px; background-color: #cccccc; display: flex; align-items: center; justify-content: center;"> $\frac{1}{6}$ </div> <div style="border: 1px solid black; width: 30px; height: 30px; background-color: #cccccc; display: flex; align-items: center; justify-content: center;"> $\frac{1}{6}$ </div> <div style="border: 1px solid black; width: 30px; height: 30px; background-color: #cccccc; display: flex; align-items: center; justify-content: center;"> $\frac{1}{6}$ </div> <div style="border: 1px solid black; width: 30px; height: 30px; background-color: #cccccc; display: flex; align-items: center; justify-content: center;"> $\frac{1}{6}$ </div> <div style="border: 1px solid black; width: 30px; height: 30px; margin-left: 5px;"></div> <div style="border: 1px solid black; width: 30px; height: 30px; margin-left: 5px;"></div> </div> <p>(Ko te whā hauono [$\frac{4}{6}$] te otinga.)</p> <p>E hia ngā hauono i roto i te haurua? (E toru. $\frac{1}{2} = \frac{3}{6}$)</p> <p>Nō reira, hurihia te tāpiritanga kia ōrite ngā tauraro o ia hautau: $\frac{1}{2} + \frac{1}{6} = \frac{3}{6} + \frac{1}{6} = \frac{4}{6}$.</p>
<p>Whakamahia ngā rauemi hautau hei whakaoti i ngā tāpiritanga me ngā tangohanga nei. Tuhia te whārite kia ōrite ngā tauraro o ngā hautau.</p>	$\frac{1}{2} - \frac{1}{6} \quad \frac{1}{8} + \frac{1}{2} \quad \frac{7}{8} - \frac{1}{2}$ $\frac{11}{12} - \frac{5}{6} \quad \frac{2}{3} + \frac{5}{12}$

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

EA		
AA	Te Whakamahi Tikanga Tau	
AM	Te Mahi a te Pouako	He Taurira Kōrero mā te Pouako
AP	<p>Ārahina ngā ākonga ki te whiriwhiri i te taurea pātahi iti rawa o ngā tauraro hei rautaki tāpiri hautau, tango hautau hoki.</p>	<p>E whakaaro ana a Mele me pēhea te whakaoti i te tangohanga nei:</p> $\frac{8}{9} - \frac{5}{6}$ <p>Kāore e taea te tango i ngā hautau mēnā he rerekē ngā tauraro, nō reira me āta kimi he hautau ōrite, kia ōrite ngā tauraro.</p> <p>Ka rārangihia e Mele ngā hautau ōrite:</p> $\frac{8}{9} = \left\{ \frac{16}{18}, \frac{24}{27}, \frac{32}{36}, \frac{40}{45}, \frac{48}{54}, \dots \right\}$ $\frac{5}{6} = \left\{ \frac{10}{12}, \frac{15}{18}, \frac{20}{24}, \frac{25}{30}, \frac{30}{36}, \frac{35}{42}, \frac{40}{48}, \frac{45}{54}, \dots \right\}$ <p>Ka kitea ko te 18 te tauraro iti rawa atu, nō reira ka tuhia e ia te tangohanga nei:</p> $\frac{8}{9} - \frac{5}{6} = \frac{16}{18} - \frac{15}{18} = \frac{1}{18}$ <p>Ko te 18 te taurea pātahi iti rawa o te 9 me te 6, nō reira ka hurihia ngā hautau hei hau tekau-mā-waru.</p>
	Hoatu te Whārangi Tārua 8–26 hei whakaoti mā ngā ākonga.	

EA

AA

AM

AP

Te Whakatairite Pāpātanga

E ako ana ahau ki te whakatairite pāpātanga.

Rauemi

He tātaitai, Whārangi Tārua 8–28.

Te Whakamahi Tikanga Tau

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Tuhia te rapanga ki te papa tuhituhi, ka pānui ai.</p> <p>Whakawhitiwhiti kōrero mō te whakatairite pāpātanga.</p>	<p>Ka oti i a Huria te 210 kg te taraiwa i roto i te 3 hāora. Ka oti i a Matiu te 340 kg i te 5 hāora. Ko wai o rāua te mea tere ki te taraiwa?</p> <p>He aha te mahi hei whakaoti i tēnei rapanga? (Whiriwhirihia te tawhiti ka oti i tēnā i tēnā o rāua i te hāora kotahi. Kātahi ka taea te whakatairite.</p> <p>Wehea te 210 ki te 3, ka 70 kg ka oti i a Huria i te hāora kotahi. Arā, 70 km/h.</p> <p>Wehea te 340 ki te 5, ka 68 kg ka oti i a Matiu i te hāora kotahi. Arā, 68 km/h.</p> <p>Ko Huria te mea tere o rāua.)</p>
<p>Tuhia te rapanga ki te papa tuhituhi, ka pānui ai.</p> <p>Whakawhitiwhiti kōrero mō te whakatairite pāpātanga.</p>	<p>\$1.85 te utu mō te pākete 500 g o te kai kongakonga wīti. \$2.88 te utu mō te pākete 800 g. Ko tēhea te mea he māmā ake te utu ā-karamu?</p> <p>He aha te mahi hei whakaoti i te rapanga nei? (Whiriwhiria te utu ā-karamu mō ia pākete.</p> <p>Wehea te 185 hēneti ki te 500, ka 0.37 hēneti mō te karamu kotahi i te pākete tuatahi.</p> <p>Wehea te 288 hēneti ki te 800, ka 0.36 hēneti mō te karamu kotahi i te pākete tuarua.</p> <p>Nō reira, he māmā ake te utu ā-karamu mō te pākete 800 g.)</p>
<p>Tukuna ngā ākonga ki te tiroiro i te utu o ngā pākete kai i te hokomaha, ka whiriwhiri ai i te utu ā-karamu māmā (ā-rita rānei). Kei te Whārangi Tārua 8–28 ētahi tauira mahi.</p>	

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

EA

AA

Te Ōwehenga me te Hautanga hei Tikanga Tohatoha

AM

E ako ana ahau ki te tohatoha rahinga i runga i āhua o tētahi ōwehenga, o tētahi hautanga rānei.

AP

Rauemi

Whārangi Tārua 8–29.

Te Whakamahi Tikanga Tau

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Tuhia te rapanga ki te papa tuhituhi, ka pānui ai.</p> <p>Ārahina ngā ākonga ki te whakamahi ōwehenga hei tohatoha i tētahi rahinga.</p>	<p>E toru ngā ākonga e whakapai ana i te māra a Manuao. Ka kī atu a Manuao, ka utua te \$400, ā, mā ngā ākonga e wehewehe ki a rātou anō.</p> <p>13 hāora te roa o te mahi a Hēni, 10 hāora te mahi a Peni, 17 hāora te mahi a Wendy. He aha te whiwhinga a tēnā me tēnā o te tokotoru nei?</p> <p>He aha te ōwehenga o ngā hāora a ngā ākonga tokotoru nei? (Ko te 13 : 10 : 17.)</p> <p>E tika ana kia pērā anō te wehewehe i te \$400. Me pēhea te whiriwhiri? (Tāpirihia ngā hāora, ka 40 katoa ngā hāora i mahi. Nō reira e tika ana kia utua te \$10 mō te hāora kotahi [40 hāora × \$10 = \$400]. Nō reira, \$130 te whiwhinga a Hēni, \$100 mā Peni, \$170 mā Wendy.)</p>
<p>Tuhia te rapanga ki te papa tuhituhi, ka pānui ai.</p> <p>Ārahina ngā ākonga ki te whakamahi hautanga hei tohatoha i tētahi rahinga.</p>	<p>Ka hokona e Roimata rāua ko Raukura tētahi whare \$193,500 te katoa o te utu. Ko te wāhanga ka utua e Roimata, ko te \$89,500, ka utua e Raukura te \$104,000. E rima tau i muri mai, ka hokona atu te whare mō te \$234,000.</p> <p>He aha te wāhanga o taua utu e tika ana mā Roimata, he aha te wāhanga e tika ana mā Raukura?</p>

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

EA

AA

AM

AP

Te Mahi a te Pouako	He Taura Kōrero mā te Pouako
	<p>He aha te hautanga o te \$193,000 i utua e Roimata? (Ko te \$89,500 o te \$193,500, arā, ko te $\frac{89\,500}{193\,500}$.)</p> <p>Nō reira koirā te hautanga o te \$234,000 e tika ana kia riro i a Roimata. Me pēhea te tātai? (Whakareatia taua hautanga ki te \$234,000. Arā, $\frac{89\,500}{193\,500}$. Ko te \$108,233 te otinga.)</p> <p>He aha te hautanga o te \$193,000 i utua e Raukura? (Ko te \$104,000 o te \$193,500, arā, ko te $\frac{104\,000}{193\,500}$.)</p> <p>Nō reira, koirā te hautanga o te \$234,000 e tika ana kia riro i a Raukura. Me pēhea te tātai? (Whakareatia taua hautanga ki te \$234,000, arā, $\frac{104\,000}{193\,500}$. Ko te \$125,767 te otinga.)</p>

Te Aroā Tikanga Tau me te Whakaaro Taurangi

Te Poutama Tau

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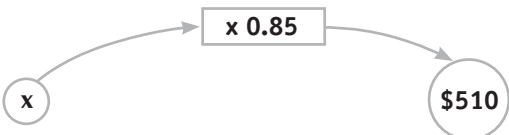
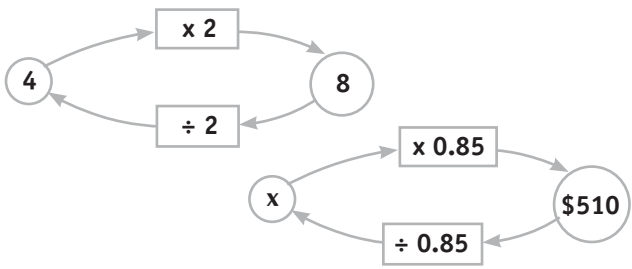
He Rapanga Ōrau Kōaro

E ako ana ahau ki te whakamahi hoahoa rerenga kōaro hei whakaoti rapanga ōrau.

Rauemi

He tātai, he hoahoa rerenga, Whārangi Tārua 8–31, Whārangi Tārua 8–32.

Te Whakamahi Rauemi

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
<p>Tuhia te rapanga ki te papa tuhituhi, ka pānui ai.</p> <p>Whakawhitiwhiti kōrero mō te huri kōaro i te hoahoa rerenga hei whakaoti rapanga ōrau.</p>	<p>Ko te 15% te whakahekenga utu mō tētahi pouaka whakaata. Ka hokona e Pererika, ā, \$510 ka utua e ia. He aha te utu o taua pouaka whakaata i mua i te whakahekenga o te utu?</p> <p>E pai ana te whakamahi hoahoa rerenga hei whiriwhiri i tēnei rapanga. I te hoahoa rerenga nei, ko te “x” hei tohu i te utu o te pouaka whakaata i mua i te whakahekenga o te utu. Ka whakareatia tēnā ki te 0.85, ka hua ko te utu whakahekenga i utua e Pererika.</p>  <p>He aha i whakareatia ai ki te 0.85? (Ko te 15% te whakahekenga o te utu, nō reira ka tangohia te 15% i te 100% ka 85%. Ka tātaihia te 85% o te utu i mua i te whakahekenga. Hurihia te 85% hei hautanga ā-ira, ko te 0.85.)</p> <p>Mēnā ka wehea te \$510 ki te 0.85, ka hua mai ko te utu i mua i te whakahekenga. Titiro ki ēnei hoahoa rerenga nei:</p>  <p>He aha te utu i mua i te whakahekenga? (Wehea te \$510 ki te 0.85, ka \$600.)</p>

EA

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Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
Kia pērā anō te tuhi hoahoa rerenga hei whakaoti i ngā rapanga nei.	<p>20% te whakahekenga utu mō tētahi papawīra. Ka hokona e Pene, \$85 ka utua e ia. He aha te utu o taua papawīra i mua i te whakahekenga o te utu?</p> <p>Ko te 18% te whakahekenga utu mō tētahi pokotaringa. Ka hokona e Anahera, ka utua e ia te \$120. He aha te utu o taua pokotaringa i mua i te whakahekenga o te utu?</p> <p>He maha ngā hū ka hokona e Waiora hei hoko atu anō i roto i tana toa. Ka tāpirihia te 60% ki ia hū takirua hei hua moni māna, ā, ka hokona atu mō te \$160. He aha te utu i utua e Waiora mō tētahi hū takirua?</p>

Te Whakaahua ā-Hinengaro/Te Whakamahi Tikanga Tau

Te Mahi a te Pouako	He Tauira Kōrero mā te Pouako
Tuhia te rapanga ki te papa tuhituhi, ka pānui ai. Ārahina ngā ākongā ki te āta whakaaro ā-hinengaro i te hoahoa rerenga hei whakaoti rapanga ōrau.	<p>Ka tāpirihia te 12.5% ki te utu mō tētahi rorohiko. Ko te \$2,350 te utu hoko. He aha te utu i mua i te tāpiritanga o te tāke hokohoko GST?</p> <p>Whakaarohia te hoahoa rerenga mō tēnei rapanga. Ko x hei tohu i te utu i mua i te tāpiritanga o te GST. Ka whakareatia te x ki te aha kia hua mai te utu hoko (\$2,350). (Ka whakareatia ki te 1.125, nā te mea ka tāpirihia te 12.5% ki te 100%, ka 112.5% Hurihia tēnei hei tau ā-ira, ko te 1.125.)</p> <p>Nō reira he aha te mahi hei tātai i te utu i mua i te tāpiritanga o GST? (Wehea te 2350 ki te 1.125.)</p>
Kei ngā Whārangi Tārua 8–31 me 8–32 ētahi atu rapanga hei whakaoti mā ngā ākongā.	

He Kupu Taka

āwhiwhi	<i>approximate</i>	tatau mawhiti tekau	<i>counting in tens</i>
hautau ōrite	<i>equivalent fraction</i>	tau hanumi	<i>mixed number (whole number and fraction)</i>
hoahoa rākau tauwehe	<i>factor tree diagram</i>	tau mā mā	<i>easy number</i>
hoahoa rerenga	<i>flow diagram</i>	tau ngahuru	<i>tens number (e.g. 10, 20, 30, 40 ...)</i>
hoahoa rerenga kōaro	<i>inverse flow diagram</i>	tau pūrua	<i>square number (1, 4, 9, 16 ...)</i>
hua moni	<i>profit</i>	tau pūtoru	<i>cube number (1, 8, 27, 64 ...)</i>
hua ōrau	<i>percentage profit</i>	tau taurite	<i>compatible numbers</i>
huapae	<i>horizontal</i>	tau toitū	<i>prime number</i>
kauruku	<i>shade</i>	taupū	<i>exponent</i>
kīanga taurangi	<i>algebraic expression</i>	tauraro	<i>denominator</i>
kōaro	<i>reverse, inverse</i>	taurea	<i>multiple</i>
koeko	<i>cone</i>	taurea pātahi	<i>common multiple</i>
mati ā-ira	<i>decimal place</i>	taurunga	<i>numerator</i>
matimaha	<i>multi-digit</i>	tauwehe	<i>factor</i>
ōwehenga	<i>ratio</i>	tauwehe pātahi	<i>common factor</i>
paheko tau	<i>number operation</i>	tauwehe toitū	<i>prime factor</i>
paparanga	<i>layer</i>	tuhene	<i>overdraft</i>
papariki	<i>tile</i>	tukutuku	<i>grid</i>
pāpātanga	<i>rate</i>	umanga	<i>company</i>
parehe	<i>pizza</i>	wāwāhi tau	<i>break numbers into parts</i>
paremata	<i>compensation</i>	whakaaro taurangi	<i>algebraic thinking</i>
poutū	<i>vertical</i>	whakaawhiwhi	<i>round (a number)</i>
pūrua	<i>the power of two (squared)</i>	whakahēhē	<i>confusing</i>
pūtakerua	<i>square root</i>	whakahekenga ōrau	<i>percentage discount</i>
pūtaketoru	<i>cube root</i>	whakakapi	<i>replace</i>
pūtoru	<i>the power of 3 (cubed)</i>	whakapikinga ōrau	<i>percentage increase</i>
rārangi tau matarua	<i>double number line</i>	whakatau tata	<i>estimate</i>
rearua	<i>double</i>	whetoko	<i>step/pace</i>
reatoru	<i>triple</i>	whētui	<i>fold</i>
takai	<i>package/wrap</i>		
tānga ngahuru	<i>standard form</i>		
tapeke	<i>total</i>		
tatau ake	<i>counting on</i>		
tatau iho	<i>counting down</i>		