

NGĀ PUKA RAPANGA PĀNGARAU TAUNAKI

Ngā Ōrautanga me Ngā Tau-ā-Ira

TAU 7 & 8

Pukapuka Kaiako

© Bobbie Hunter and Jodie Hunter

© Nā Arahina Rahiti I Whakamāori

Rapanga 1

He aha te ōrau o tō pounamu katoa kua kī i te wai? Kia rite ki te whakamārama me te whakatika me pēhea tō mōhiotanga.

He aha te ōrau kua tikiake koe i taua kēmu rorohiko? E hia atu anō ngā mea e hiahia ana e koe hei tikiake hei whakaoti?

Tuhia mā te whakamahi i ngā whakaaturanga rerekē tae atu ki ngā tohu, ā, kia rite ki te whakamārama me te whakatika i te ōritetanga.

Hei āwhina i te kaiako

I mua i te whakarewatanga, hoatu ki ngā ākongā he mātiti mō ngā ripanga wā 1 ki te 10 me te tono i ngā ākongā kia whakaoti me te hopu i tō rātou wā (i te huarahi tūmatanui).

<http://www.mental-arithmetic.co.uk/multiplication-grids-pdfgenerator.htm>

Ko te whāinga kia oti te mātiti i raro iho i te 5 meneti, nā reira tū i te 5 meneti. Tonoa rātou ki te hopu i tō rātou wā, i te nui rānei o ngā mea kua oti i a rātou. Ka whakamahia tēnei ngohe puta noa i te wae, ā, me whakamahi hei whakamahana puta noa i te tau ki te whakawhanake i te matatau ki ngā ripanga wā.

Ka taea tēnei hei ngohe akomanga katoa, hei ngohe haurua rānei o te akomanga.

Me wātea he awhe pounamu pūataata rerekē te rahi e taea ai te pupuri wai. Whakakāia ngā pounamu ki ngā taumata wai me te whakanoho i tētahi pounamu ki waenga i ngā rōpū ākongā tokowhā. Tonoa ngā ākongā kia kōrerorero me te whakaae ki tētahi uara tau mai i te kotahi ki te rau hei whakatau tata i te ōrau 'kī' o te ipu. Kī atu ki a rātou me āhei rātou ki te whakamārama me te whakatika i tā rātou whakatau tata. Tukuruatia te ngohe kia maha ngā wā mā te whakamahi i ngā taumata wai rerekē me te hoatu i ngā ipu rerekē te hanga me te rahi o ngā ākongā. Whakahauhautia ngā ākongā ki te whakamahi i te ritua ā-tau

Mō te tūmahi tuarua, me whai rīpene roa, kāore i tohua ki te papa o te akomanga hei tohu i te tikiake o tētahi kēmu rorohiko. Whakamahia tētahi tautohu papa mā hei tohu i tētahi ira i runga i te rīpene e tohu ana i te taumata tikiake kua tutuki. Tukuruatia te ngohe i ngā wā katoa me mātua whakarite kei runga ake te tohu i te raina i te 10%.

Whakangāwari i ngā ākongā ki te whakaaro i ētahi atu ingoa ka taea e rātou te karanga ko te ōrau kī. Kia mōhio rātou kei te kōrero tonu mātou mō tētahi katoa me tētahi wāhanga o te katoa ahakoa kei te whakamahi mātou i ngā hautau, ngā ā-ira, ngā ōrau rānei. Hei tauira, 50% o te pounamu katoa kotahi.



Whakaaro Matua o te Ao Pāngarau

Ko te ōrau tētahi atu huarahi ki te tuhi i tētahi ā-ira e whakataurite ana i tētahi wāhanga ki tētahi katoa e 100 ana te katoa, ā, ka taea te pāhono ki te pūwāhi ōrite i te raina tau.

E pā ana te ōrau ki te rahi o te katoa.

Ko te ōrau he momo ōwehenga motuhake e whakaritea ai tētahi wāhanga ki te katoa, ā, ko te katoa ko te 100.

Ko te ā-ira tētahi atu ingoa mō tētahi hautanga, ā, ka taea te pāhono ki te pūwāhi ōrite i te raina tau.

Hei āwhina i te kaiako

Mō te wāhanga tuarua ka whakangāwari ngā ākongā ki te kite kua whakarōpūtia ngā tau ki ngā mana maha o te tekau (tekau, rau, mano, whakatekau, rau, mano, me ērā atu mea).

Aroturuki mō ngā ākongā e whakamahi ana i ngā kupu i roto i te reo o te tau haumarū... ko te hawhe kī, e rima tekau hēneti rānei, ā, kai te kōrero tonu mātau i roto i te kotahi rau.

Tūmanako kia tohu ngā ākongā mā te whakamahi i ngā whakaaturanga rerekē, tae atu ki te whakatautika i te ōrau, ngā ā-ira, ngā hautanga me ngā pikitia o ngā pounamu wai, ngā pae tiakarete, ngā raina. Ki te kore ngā ākongā e whakamahi i ngā ā-ira, whakaaturia anōtia te ine hei ā-ira ōrite me ngā hautau.

Pouako ki te hopu i ngā tohu i te reo hautanga e whakamahia ana e ngā ākongā i a rātou e whakamārama ana. Ina whakamahia te haurua, hauwhā rānei, ētahi atu hautanga rānei, me whakamārama anō ngā ākongā mā te ōrau me te whakapūkete hei tau hauora ōrite.

Wā toha

Tīpakohia ngā ākongā hei tiritiri i muri i ia whakatau tata i te mea tuatahi e āhei ana ki te whakamārama me te whakatika i te uara tau kua whakaaetia e rātou mā te whakamahi i ō rātou matimati hei whakaatu i te ritua tau me ngā kupu hautanga, ōrau rānei. I te tūmahi tuarua, tīpakohia ngā ākongā e āhei ana ki te whakamārama me te whakatika i te uara tau, ā, kua whakaatu i tō rātou whakatau tata i ngā huarahi maha.

Hono

He aha ngā tauritenga ā-ira mō:

25%, $\frac{1}{4}$, 50%, $\frac{1}{2}$, 20%, $\frac{1}{5}$, 10%, $\frac{1}{10}$?

He aha te taurira ka kitea e koe?

Ngā tini mata o te Marautanga

Te Hanga o ngā Tau 7/8

Tautohu, te pānui, te tuhi, te whakatairite me te raupapa tauoti ki ngā pū o te 10:
h.t.; $10,000 = 10^4$

Tautohu, te pānui, te tuhi, te whakatairite me te raupapa tauoti me ngā tau-a-ira ki ngā pū o te 10:
h.t., $0.01 = 1 \div 100 = 10^{-2}$

Ngā Paheko Tau 7

Whakaāwhiwhi i ngā tau-ā-ira ki te hautekau, haurau, tauoti rānei e pātata ana

Whakarea tauoti.

Nga Tau Whakatau Tau 7/8

Tautohu, te pānui, te tuhi, te whakaahua hautanga, tau-a-ira (kia 3 ngā mati ā-ira) me ngā ōrau.

Tautohu, te pānui, te tuhi, te whakaahua hautanga, tau-a-ira me ngā ōrau.

Whakatairite, te raupapa me te huri i ngā hautau, tau-a-ira (kia 3 ngā mati ā-ira) me ngā ōrau.

Whakatairite, te raupapa me te huri i ngā hautau, tau-a-ira me ngā ōrau.

Kimi i te rahinga mena e mōhio ana ki te hautanga māmā, te tau ā-ira rānei o te rahinga:

h.t., 25% o te rahinga, ko te \$100, nō reira, he aha te rahinga?

Kimi i te rahinga mena e mōhio ana ki te hautanga, te tau ā-ira rānei o te rahinga:
h.t., 75% o te rahinga, ko te \$45, nō reira, he aha te rahinga?

Whaingā ako

Ka ako ngā mokopuna ki te:

Whakamārama, whakatautika hoki i te whakataurite o tētahi wāhanga ki te katoa.

Whakaaturia te whakaaro mā te whakamahi i ngā momo tuhipoka rerekē, tae atu ki ngā kupu.

Rapanga Motuhake

- 1) Kei te tākaro a Marie i tētahi kēmu rorohiko. E 100 ngā wā i ngana ai ia ki te patu i tētahi ūnga, ā, i tutuki pai te patu i te 50% o ngā nganatanga. E hia ngā nganatanga kāore i tutuki i a ia ki te tuki i te ūnga?
- 2) Kei te tākaro a Marie i tētahi kēmu rorohiko. E 100 ngā wā i ngana ai ia ki te patu i tētahi ūnga, ā, i tutuki pai te patu i te 25% o ngā nganatanga. E hia ngā nganatanga kāore i tutuki i a ia ki te tuki i te ūnga?
- 3) Kei te tākaro a Marie i tētahi kēmu rorohiko. E 100 ngā wā i ngana ai ia ki te patu i tētahi ūnga, ā, i tutuki pai te 75% o ngā nganatanga. E hia ngā nganatanga kāore i tutuki i a ia ki te tuki i te ūnga?
- 4) Kei te tākaro a Marie i tētahi kēmu rorohiko. E 100 ngā wā i ngana ai ia ki te patu i tētahi ūnga, ā, i tutuki pai te patu i te 80% o ngā nganatanga. E hia ngā nganatanga kāore i tutuki i a ia ki te tuki i te ūnga?
- 5) I roto i te akomanga a Marie, e 30 ngā ākongā, e 20% anake e tākaro ana i te kēmu rorohiko ōrite ki a Marie. E hia ngā ākongā e tākaro ana i te kēmu?
- 6) I roto i te akomanga rua a Marie, e 55 ngā ākongā, e 30% anake e tākaro ana i te kēmu rorohiko ōrite ki a Marie. E hia ngā ākongā e tākaro ana i te kēmu?
- 7) Mēnā e 20 ngā kōtiro i roto i te akomanga e 30 ngā ākongā. He aha te ōrau o ngā tama?
- 8) Mēnā e 18 ngā kōtiro i roto i tētahi akomanga e 33 ngā ākongā. He aha te ōrau o ngā tama?

Ngā tini mata o te Reo Pāngarau

Ōrau, ōrautanga, katoa, hautanga, tau hautanga, tau ā-ira, tau hautau, ōrite

Mā te kaiako

Ngā Rongoā me ngā paku hapa

Rapanga 2

Kei te oma koe me $\bar{0}$ hoa i runga i te ara tākaro i te pāka. E tohu ana tēnei rīpene i te riu e oma ana koe.

Mēnā ka whakatakotoria e au te kāri mati-0 ki te tīmatanga o taua kāri e tohu ana kua oma koe i te 0 mita, ā, ko te kāri mati-1 e tohu ana kāore anō koe kia eke ki te 1 mita.

Hei ōrau o te mita, pēhea te tawhiti o tō oma?

He pēhea te tawhiti o tō oma ināianei?

Tuhia mā te whakamahi i ngā whakaaturanga rerekē tae atu ki ngā tohu, ā, kia rite ki te whakamārama me te whakatika i te ōritetanga.

Hei āwhina i te kaiako

I mua i te whakarewatanga, hoatu ki ngā ākongā he mātiti kua oti mō ngā ripanga wā 1 ki te 10, pātai atu ki a rātou kia miramira i ngā take kāore e hiahiatia ana e rātou te ako nā te āhuatanga whakawhitiwhiti - me tapatoru ēnei i te taha matau o te mātiti.

Kātahi ka pātai atu ki a rātou kia miramira i ngā 1, 2, 5, me te 10, kia 21 ngā take hei ako. Miramirahia ka ūnga koe i ngā tau tapawhā e 6 e toe ana i te tuatahi (3 x 3, 4 x 4, 6 x 6, 7 x 7, 8 x 8, 9 x 9)... Tuhia te whārite me te whakautu ki te papa, ka pātai atu ki ngā ākongā kia hanga kāri kōhiko mō ēnei take mēnā kāore rātou i te mōhio aunoatia hei whakaharatau i te wā o te ngohe pāngarau takitahi.

Me wātea me te whakamahi i te rīpene roa kāore i tohua ki te papa o te akomanga hei tohu i tētahi ara oma e whakamahia ana i roto i ngā tākaro me ngā kāri mati hei tohu i ngā tau katoa. Whakamahia he tautohu papa mā hei tohu i tētahi ira i runga i te rīpene e tohu ana i te wāhi i tae atu ai rātou ki te ara oma i waenga i ngā tau. Tukuruatia te ngohe kia rua ngā wā me te arotahi ki ngā tau i waenga i ngā tau. I te tuatoru o ngā wā ka whakatakotoria te kāri mati-0 ki te tīmatanga me te kāri mati-1 i te mutunga. Tohua ki te raina he wāhi huri noa i te 5%. Tukuruatia ētahi wā i ngā wā katoa ka waiho te tohu ki raro iho i te 10%.

Whakangāwari i ngā ākongā kia kite he tau kei waenga i ngā tau, ā, kei waenganui i te 0 me te .1. Whakarite kia whānui te matapakinga tae atu ki te whakamārama a te ākongā me te whakatikatika he aha hei tauira, 1% e tuhia ana hei $.01$ me $\frac{1}{100}$ te tūmanako kia pā ki ngā ākongā te papā hinengaro e pā ana ki ngā tau i raro iho i te .1.

Tūmanako kia whakamārama, kia whakaatu hoki ngā ākongā mā te whakamahi i ngā whakaaturanga rerekē hei whakatautika he aha hei tauira $5\% = .05 = \frac{5}{100}$. Kei roto i ēnei ko ngā pounamu wai, ngā pae tiakarete me ngā raina, engari ka taea te whakauru i tētahi tūtohi uara wāhi.

Kia mōhio ki ngā ākongā e whakahua ana i te papā hinengaro mō te take i whakaaturia ai ngā tau i raro iho i te 10% hei rau, ā, ka whakapūketetia ki ngā wāhi ā-ira e toru me te kore hei tohu i ngā whakatekau.

Whakaaro Matua o te Ao Pāngarau

Ko te ōrau tētahi atu huarahi ki te tuhi i tētahi ā-ira e whakataurite ana i tētahi wāhanga ki tētahi katoa e 100 ana te katoa, ā, ka taea te pāhono ki te pūwāhi ōrite i te raina tau.

E pā ana te ōrau ki te rahi o te katoa.

Ko te ōrau he momo ōwehenga motuhake e whakaritea ai tētahi wāhanga ki te katoa, ā, ko te katoa ko te 100.

Ko te ā-ira tētahi atu ingoa mō tētahi hautanga, ā, ka taea te pāhono ki te pūwāhi ōrite i te raina tau.

Wā toha

Tīpakohia ngā ākongā hei tiritiri i muri i ia whakataua tata ko wai e āhei ana ki te whakamārama me te whakatika i te uara tau kua whakaaetia e rātou, ā, kua whakaatu i tā rātou whakataua tata i roto i ngā huarahi hautanga maha.

Hono

He aha te hautanga me te ōrite ā-ira mō ēnei tau:

10%, 1%, 5%, 50%, 9%, 99%, 100%

He aha ngā tauira e kitea ana e koe?

Whaingā ako Ka ako ngā mokopuna ki te:

Whakamārama, whakatautika hoki i te whakataurite o tētahi wāhanga ki te katoa.

Whakaaturia me te whakamārama i te whakaaro mā te whakamahi i ngā ira ōrite ki tētahi raina tau.

Whakaaturia te whakaaro hei whakamārama me te whakatautika i te ōritetanga mā te whakamahi i ngā momo tuhipoka rerekē, tae atu ki ngā tohu me ngā kupu.

Rapanga Motuhake

He aha ō rātou tau hautanga ōrite?

- | | | |
|------------------|---|---|
| 1. 75% | = | = |
| 2. $\frac{1}{4}$ | = | = |
| 3. 0.7 | = | = |
| 4. $\frac{3}{4}$ | = | = |
| 5. 23% | = | = |
| 6. 0.45 | = | = |
| 7. Rua-tuatoru | = | = |
| 8. $\frac{1}{5}$ | = | = |
| 9. 70% | = | = |
| 10. E toru-rima | = | = |
| 11. 130 % | = | = |
| 12. 0.10 | = | = |
| 13. 0.01 | = | = |
| 14. 0.07 | = | = |
| 15. 0.13 | = | = |

Ngā tini mata o te Marautanga

Te Hanga o ngā Tau 7/8

Tautohu, te pānui, te tuhi, te whakatairite me te raupapa tauoti ki ngā pū o te 10:
h.t.; $10,000 = 10^4$

Tautohu, te pānui, te tuhi, te whakatairite me te raupapa tauoti me ngā tau-a-ira ki ngā pū o te 10:
h.t., $0.01 = 1 \div 100 = 10^{-2}$

Ngā Paheko Tau 7

Whakaāwhiwhi i ngā tau-ā-ira ki te hautekau, haurau, tauoti rānei e pātata ana

Whakarea tauoti.

Nga Tau Whakataua Tau 7/8

Tautohu, te pānui, te tuhi, te whakaahua hautanga, tau-a-ira (kia 3 ngā mati ā-ira) me ngā ōrau.

Tautohu, te pānui, te tuhi, te whakaahua hautanga, tau-a-ira me ngā ōrau.

Whakatairite, te raupapa me te huri i ngā hautau, tau-a-ira (kia 3 ngā mati ā-ira) me ngā ōrau.

Whakatairite, te raupapa me te huri i ngā hautau, tau-a-ira me ngā ōrau.

Kimi i te rahinga mena e mōhio ana ki te hautanga māmā, te tau ā-ira rānei o te rahinga:
h.t., 25% o te rahinga, ko te \$100, nō reira, he aha te rahinga?

Kimi i te rahinga mena e mōhio ana ki te hautanga, te tau ā-ira rānei o te rahinga:
h.t., 75% o te rahinga, ko te \$45, nō reira, he aha te rahinga?

Mā te kaiako

Ngā Rongoā me ngā paku hapa

Ngā tini mata o te Reo Pāngarau

Ōrau, ōrautanga, katoa, hautanga, tau hautanga, tau ā-ira, tau hautau, ōrite



Rapanga 3

I te whakataetae a Maika rāua ko Hona ki te kite ko wai ka āhei ki te pana i ngā motokā tākaro puta noa i te papa. I whanganga a Maika i te tawhiti o ia motokā, ā, i kī ia i toa a Hona nā te mea ahakoa i tae o rāua motokā ki te 3.45 mita, ā, kāore tētahi o rāua i tae ki te 3.46 mita, ka haere kē atu te motokā o Hona.

Ka taea e koe te hopu i ngā tawhiti rerekē e 12 neke atu rānei mō tana motokā e whakaatu ana i te motokā o Hona i haere kē atu.

Kia rite ki te whakamārama me te whakatika i ō whakautu mā te whakamahi i ngā raina tau, hoahoa, tātuhī, hautau, me ngā ā-ira.

Hei āwhina i te kaiako

I mua i tō whakarewatanga i te tūmahi, tuhia te aho e whai ake nei. Pātai atu ki ngā ākonga kia whakaoti i ia whārite i mua i te tuhi i te mea panuku:

$$3 \times 3 =$$

$$3 \times 3 + 3 \times 3 =$$

$$6 \times 6 =$$

$$6 \times 3 =$$

$$4 \times 4 =$$

$$4 \times 4 + 4 \times 4 =$$

$$8 \times 8 =$$

$$4 \times 8 =$$

Pātai atu ki a rātou kia kōrerorero i ngā tauira ka kitea e rātou, me te miramira mēnā e mōhio ana rātou ki te 3×3 , 6×6 rānei, ko te 6×3 he taurua 3×3 rānei haurua 6×6 , ā, waihoki mēnā e mōhio ana rātou ki te 4×4 , 8×8 rānei, ko te 4×8 he taurua 4×4 , haurua rānei 8×8

Me whakaatu ngā whare uara wāhi (arā ko ngā wāhi ā-ira) ki te pakitara, engari kaua e aro atu ki ngā ākonga kia hoki rā anō te tiritahi.

Tirohia te whare uara wāhi me te īnaki o ngā ā-ira ki te kaipupuri wāhi

Th	H	T	O	Tth	Hth	TTh	TTh	HTh

Tūhuratia te ariā ko ngā wāhi ki te taha mauī o te ira ira he mana tekau.

$$10 = 10^1$$

$$100 = 10^2$$

Ko ngā uara wāhi ki te taha matau o te iraira he mana o te tekau:

$$.1 = 10^{-1}$$

$$.01 = 10^{-2}$$

$$.001 = 10^{-3}$$

Whakaaro Matua o te Ao Pāngarau

Ko te ā-ira tētahi atu ingoa mō tētahi hautanga, ā, ka taea te pāhono ki te pūwāhi ōrite i te raina tau.

Ko te ōrau tētahi atu huarahi ki te tuhi i tētahi ā-ira e whakataurite ana i tētahi wāhanga ki tētahi katoa e 100 ana te katoa, ā, ka taea te pāhono ki te pūwāhi ōrite i te raina tau.

E pā ana te ōrau ki te rahi o te katoa.

Ko te ōrau he momo ōwehenga motuhake e whakaritea ai tētahi wāhanga ki te katoa, ā, ko te katoa ko te 100.

Mēnā e rua ngā rahinga e rerekē ana, ka pātahi hāngai ngā rahinga (i te whakanuitanga o tētahi), i te pātahi kōaro rānei (i te whakanuitanga o tētahi, ka heke tētahi).

Hei āwhina i te kaiako

Ina tuhia ngā tau ki te tuhipoka ā-ira, he ōrite te pātahitanga i waenga i ngā wāhi ki te taha matau o te ira ira ki te pātahitanga i waenga i te taha mauī o te ira ira-tekau ngā uara o ia wāhi e tekau ngā wā o te wāhi ki tōna matau.

Whakangāwari i ngā ākonga kia mōhio kei te kōrero tonu koe mō tētahi hautanga, ā-ira rānei o tētahi katoa, nō reira i roto i ngā whare uara wāhi kāore te ira ira e wehe i te whare o ngā whakatekau, engari ka īnaki puta noa.

Kia mōhio ki ngā ākonga e mōhio ana he tau mutunga kore kei waenga i ngā tau.

Wā toha

Tīpakohia ngā ākonga hei tiritiri kua hoatu he awhe whakamārama

Hono

He aha ētahi tau i waenganui:

1 me te 2? 2.12 me te 2.13? .09 me te .1?

He aha tāu e kite nei? Ka taea e koe te whakaaro mō ngā tau i waenga i ngā tau?

Whainganga ako Ka ako ngā mokopuna ki te:

Whakamārama, whakatautika hoki i te whakataurite o tētahi wāhanga ki te katoa.

Whakaaturia me te whakamārama i te whakaaro mā te whakamahi i ngā ira ōrite ki tētahi raina tau.

Whakaaturia te whakaaro hei whakamārama me te whakatautika i te ōritetanga mā te whakamahi i ngā momo tuhipoka rerekē, tae atu ki ngā tohu me ngā kupu.

Ngā tini mata o te Marautanga

Te Hanga o ngā Tau 7/8

Tautohu, te pānui, te tuhi, te whakatairite me te raupapa tauoti ki ngā pū o te 10:
h.t.; $10,000 = 10^4$

Tautohu, te pānui, te tuhi, te whakatairite me te raupapa tauoti me ngā tau-a-ira ki ngā pū o te 10:
h.t., $0.01 = 1-100 = 10^{-2}$

Ngā Paheko Tau 7

Whakaāwhiwhi i ngā tau-ā-ira ki te hautekau, haurau, tauoti rānei e pātata ana

Whakarea tauoti.

Nga Tau Whakatau Tau 7/8

Tautohu, te pānui, te tuhi, te whakaahua hautanga, tau-a-ira (kia 3 ngā mati ā-ira) me ngā ōrau.

Tautohu, te pānui, te tuhi, te whakaahua hautanga, tau-a-ira me ngā ōrau.

Whakatairite, te raupapa me te huri i ngā hautau, tau-a-ira (kia 3 ngā mati ā-ira) me ngā ōrau.

Whakatairite, te raupapa me te huri i ngā hautau, tau-a-ira me ngā ōrau.

Kimi i te rahinga mena e mōhio ana ki te hautanga māmā, te tau ā-ira rānei o te rahinga:

h.t., 25% o te rahinga, ko te \$100, nō reira, he aha te rahinga?

Kimi i te rahinga mena e mōhio ana ki te hautanga, te tau ā-ira rānei o te rahinga:
h.t., 75% o te rahinga, ko te \$45, nō reira, he aha te rahinga?

Rapanga Motuhake

He aha ngā tau ka taea e koe te whakapūkete i waenganui:

1. .1 me te .2
2. 50% me te 51%
3. 5% me te 6%
4. .4 me te .5
5. .51 me te .56
6. .11 me te .12
7. .541 me te .542
8. 1.3 me te 1.4
9. 478.51 me te 478.52

Ngā tini mata o te Reo Pāngarau

Ōrau, ōrautanga, katoa, hautanga, tau hautanga, tau ā-ira, tau hautau, ōrite

Mā te kaiako

Ngā Rongoā me ngā paku hapa

Rapanga 4

E 4 ngā whakamutunga i roto i tētahi whakataetae papa reti. Anei a rātau tapeke mo a rātau whakahaere e 2 me te wāhanga tinihanga. Ka riro i tēnei whakataetae ia wāhanga i roto i te 10.

Whakataetae	1	2	3	4
Whakahaere 1	8.903	7.796	7.897	8.03
Whakahaere 2	7.0001	9.9911	8.98	8.004
Ngā māminga	8.987	7.5	8.0	8.039

Ko wai i haere tuatahi? Tuarua? Tuatoru?

E hia ngā piro e hiahiatia ana e te whakamutunga tuarua kia haere mai i te tuatahi?

E hia ngā piro e hiahiatia ana e te whakamutunga tuatoru kia haere mai i te tuatahi?

Hei āwhina i te kaiako

I mua i te whakarewatanga, hoatu ki ngā ākongā he mātiti mō ngā ripanga wā 1 ki te 10 me te tono i ngā ākongā kia whakaoti me te hopu i tō rātou wā (i te huarahi tūmatanui).

<http://www.mental-arithmetic.co.uk/multiplication-grids-pdfgenerator.htm>

Ko te whāinga kia oti te mātiti i raro iho i te 5 meneti kia tū i te 5 meneti. Tonoa ngā ākongā ki te hopu i tō rātou wā, i te nui rānei o ngā mea kua oti i a rātou. Pātai atu ki a rātou kia tirohia mēnā kua whakapai ake rātou i tō rātou wā, i te nui rānei o te whakaotinga. I te wā o te whakarewatanga, tirohia anō te whakamahinga o tētahi raina tau hei tāpiri me te tango i ngā tau oti. Whakamahia ngā tau e paheko ana hei hanga i te 10, te 100, me te 1000 e whai ake nei.

Tūhura me ngā ākongā me pēhea e taea ai e rātou te whakahāngai i ēnei ki te uara wāhi o ngā tau oti.

Me whai whare uara wāhi mō ngā tau katoa me ngā tau ā-ira i runga i te pakitara.

Whakangāwari i ngā ākongā kia kite i te wā e whakakotahi anō ana i ngā ā-ira kia noho ai te rau, te whakatekau, te kotahi rānei e whai ake nei, he ōrite te neke o te tūtohi uara wāhi mai i te matau ki te mauī ki te tāpiri i ngā tau katoa me te tukanga ōrite mō te tangohanga.

Tūmanako kia whakaatu ngā ākongā i ō rātou whakaaro mā te tuhi ōpaki puta noa i te whārangi, i tētahi raina tau, ā, **kaua e whakamahi i tētahi hātepe hātepe ōkawa e whakarārangi ai ngā tau i muri i te ira ā-ira.**

Whakaaro Matua o te Ao Pāngarau

Ko te ā-ira tētahi atu ingoa mō tētahi hautanga, ā, ka taea te pāhono ki te pūwāhi ōrite i te raina tau.

Ko te ōrau tētahi atu huarahi ki te tuhi i tētahi ā-ira e whakataurite ana i tētahi wāhanga ki tētahi katoa e 100 ana te katoa, ā, ka taea te pāhono ki te pūwāhi ōrite i te raina tau.

E pā ana te ōrau ki te rahi o te katoa.

Ko te ōrau he momo ōwehenga motuhake e whakaritea ai tētahi wāhanga ki te katoa, ā, ko te katoa ko te 100.

Mēnā e rua ngā rahinga e rerekē ana, ka pātahi hāngai ngā rahinga (i te whakanuitanga o tētahi), i te pātahi kōaro rānei (i te whakanuitanga o tētahi, ka heke tētahi).

He ōrite ngā pānga o ngā mahi mō te tāpiri me te tangohanga ki ngā hautanga me ngā ā-ira ki ērā me ngā tau oti.

Wā toha

Tīpakohia ngā ākonga hei tiritiri ko wai i whakamahi i tētahi raina tau hei tohu i ō rātou whakaaro, ā, ka whakakotahi i ēnei ki ngā whakarōpū tekau, ā, ka taea te whakamārama me te whakatika i te take i whakamahia ai ngā tau ki ngā whakarōpū tekau.

Hono

Tohua ēnei ki tētahi raina tau

$$\begin{aligned} .7 + .3 &= 1 \\ .07 + .03 &= .1 \\ .007 + .003 &= .01 \end{aligned}$$

He aha ngā tauira e kitea ana e koe? Kia rite ki te whakamārama me te whakatika i te tauira e kitea ana e koe mā te whakamahi i te whare uara wāhi.

Whainganga ako Ka ako ngā mokopuna ki te:

Whakaotia ngā raruraru tāpiri e pā ana ki ngā tau tae atu ki ngā wāhi ā-ira e toru, me te whakamārama me te whakatautika i ngā rongoā.

Tohu whakaaro hei whakamārama me te whakatautika i te uara wāhi e pā ana ki ngā tau tae atu ki ngā wāhi ā-ira e toru.

Rapanga Motuhake

Whakaraupapatia ēnei tau ā-ira mai i te nui rawa ki te iti rawa:

1. 1.00000, .900000, .99, .9
2. .90146, .9015, .9000000, .99
3. .4405, .4, .321, .99999, .41, .9
4. .50000, .45100, .510, .52, .5200009
5. 1.2, 1.209, 1.21, 1.20099

Tuhia he whakamārama hei whakamārama i ngā ture e whakamahia ana e koe hei raupapa i ia haupae.

Ngā tini mata o te Marautanga

Te Hanga o ngā Tau 7/8

Tautohu, te pānui, te tuhi, te whakatairite me te raupapa tauoti ki ngā pū o te 10:
h.t.; $10,000 = 10^4$

Tautohu, te pānui, te tuhi, te whakatairite me te raupapa tauoti me ngā tau-a-ira ki ngā pū o te 10:
h.t., $0.01 = 1 \div 100 = 10^{-2}$

Ngā Paheko Tau 7

Whakaāwhiwhi i ngā tau-ā-ira ki te hautekau, haurau, tauoti rānei e pātata ana

Whakarea tauoti.

Nga Tau Whakatau Tau 7/8

Tautohu, te pānui, te tuhi, te whakaahua hautanga, tau-a-ira (kia 3 ngā mati ā-ira) me ngā ōrau.

Tautohu, te pānui, te tuhi, te whakaahua hautanga, tau-a-ira me ngā ōrau.

Whakatairite, te raupapa me te huri i ngā hautau, tau-a-ira (kia 3 ngā mati ā-ira) me ngā ōrau.

Whakatairite, te raupapa me te huri i ngā hautau, tau-a-ira me ngā ōrau.

Kimi i te rahinga mena e mōhio ana ki te hautanga māmā, te tau ā-ira rānei o te rahinga:
h.t., 25% o te rahinga, ko te \$100, nō reira, he aha te rahinga?

Kimi i te rahinga mena e mōhio ana ki te hautanga, te tau ā-ira rānei o te rahinga:
h.t., 75% o te rahinga, ko te \$45, nō reira, he aha te rahinga?

Mā te kaiako

Ngā Rongoā me ngā paku hapa

Ngā tini mata o te Reo Pāngarau

*Ōrau, ōrautanga, katoa,
hautanga, tau hautanga,
tau ā-ira, tau hautau, ōrite*



Rapanga 5

Whakaotia ēnei whārite mā ngā ara rerekē e rua

$$.625 + .78$$

$$1.324 + 1.0769$$

$$.469 + 8$$

$$19.2 + 8091$$

$$1 - .05$$

$$.1 - .05$$

$$9.99 - .001$$

Hei āwhina i te kaiako

I mua i tō whakarewatanga i te tūmahi, tuhia ngā whārite e whai ake nei:

$$6 \times 6 =$$

Tauira ka taea te tuhi i te 6×6 hei $(2 \times 3) \times (2 \times 3)$

Pātai atu ki ngā ākonga kia kōrerorero i ngā mea e kitea ana e rātou, me te miramira ko te 2×3 he take o te 6 e hono ana ki ngā mahi o mua.

$$\text{Pūkete } (2 \times 2) \times (3 \times 3) = 4 \times 9$$

Pātai atu ki a rātou kia kōrerorero i ngā tauira e kitea ana e rātou, ā, ka tūhono ki te $6 \times 6 = 36$ me te $4 \times 9 = 36$.

I te wā o te whakarewatanga, haere tonu ki te tūhura i te kanohi, te wāhi, me te uara katoa o ngā tau katoa me ngā tau ā-ira.

Whakangāwari i ngā ākonga kia kite i te tangohanga mā te whakamahi i ngā ira me whakakotahi anō kia noho ai te rau, te tekau, te kotahi rānei e whai ake nei, ā, ko te neke o te tūtohi uara wāhi mai i te matau ki te mauī kia rite ki te tāpiritanga o ngā tau oti.

Tirohia ngā ākonga e whakamahi ana i te whakakotahi anō i ngā tau ā-ira ki ngā whakarōpū tekau.

Tūmanako kia whakaatu ngā ākonga i ō rātou whakaaro mā te tuhi ōpaki puta noa i te whārangi, i tētahi raina tau, ā, **kaua e whakamahi i tētahi hātepe hātepe ōkawa e whakarārangi ai i ngā tau i muri i te ira ā-ira.**

Wā toha

Tīpakohia ngā ākonga hei tiritiri ko wai ka taea te whakamārama me te whakatika i ā rātou rongoā, mā te tātuhi i ngā whakaaturanga me te whakamahi i te uara wāhi hei whakatika i ā rātou mahi.

Whakaaro Matua o te Ao Pāngarau

Ko te ā-ira tētahi atu ingoa mō tētahi hautanga, ā, ka taea te pāhono ki te pūwāhi ōrite i te raina tau.

Ko te ōrau tētahi atu huarahi ki te tuhi i tētahi ā-ira e whakataurite ana i tētahi wāhanga ki tētahi katoa e 100 ana te katoa, ā, ka taea te pāhono ki te pūwāhi ōrite i te raina tau.

E pā ana te ōrau ki te rahi o te katoa.

Ko te ōrau he momo ōwehenga motuhake e whakaritea ai tētahi wāhanga ki te katoa, ā, ko te katoa ko te 100.

Mēnā e rua ngā rahinga e rerekē ana, ka pātahi hāngai ngā rahinga (i te whakanuitanga o tētahi), i te pātahi kōaro rānei (i te whakanuitanga o tētahi, ka heke tētahi).

He ōrite ngā pānga o ngā mahi mō te tāpiri me te tangohanga ki ngā hautanga me ngā ā-ira ki ērā me ngā tau oti.

Hono

.1 + .9=
.17 + .93=
1 - .9
.1 - .09

He aha ngā tauira e kitea ana e koe. Whakamahia te whare uara wāhi hei whakamārama i ō whakarōpūtanga anō.

Whainganga ako Ka ako ngā mokopuna ki te:

Whakaotia ngā raruraru e pā ana ki te ā-ira mā te tāpiri, te tango rānei, me te whakamārama me te whakatautika i te rongoā.

Tohu whakaaro hei whakamārama me te whakatautika i te uara wāhi e pā ana ki ngā tau ā-ira.

Whakamārama, whakatautika hoki i te whakaaro mā te tuhi tuhipoka, ngā tohu, me ngā kupu.

Rapanga Motuhake

Whakaraupapatia ēnei tau mai i te iti rawa ki te mea nui rawa:

1. $\frac{1}{2}$, .49999, 49%
2. $\frac{1}{3}$, $\frac{1}{2}$, 93%, .510, .003, 51%
3. .2409, .2, 25%, $\frac{1}{4}$, .2000001, $\frac{3}{4}$
4. $1\frac{1}{2}$, 1.9, 1.09, 125%, 100%
5. $\frac{1}{5}$, 21%, .201
6. 3%, $\frac{1}{3}$, .03, .3909
7. $\frac{1}{2}$, .49999, 49%
8. .20009, $\frac{2}{3}$, .9, 99%, $\frac{9}{10}$
9. $1\frac{1}{2}$, 1.49999, 160%, 1.9, 150%
10. .1, $\frac{1}{2}$, .00001, $\frac{1}{100}$, 200%

Tuhia he whakamārama mō ngā ture i whakamahia e koe hei whakaraupapa.

Ngā tini mata o te Marautanga

Te Hanga o ngā Tau 7/8

Tautohu, te pānui, te tuhi, te whakatairite me te raupapa tauoti ki ngā pū o te 10:
h.t.; 10,000 = 10⁴

Tautohu, te pānui, te tuhi, te whakatairite me te raupapa tauoti me ngā tau-a-ira ki ngā pū o te 10:
h.t., 0.01 = 1—100 = 10⁻²

Ngā Paheko Tau 7

Whakaāwhiwhi i ngā tau-ā-ira ki te hautekau, haurau, tauoti rānei e pātata ana

Whakarea tauoti.

Nga Tau Whakatau Tau 7/8

Tautohu, te pānui, te tuhi, te whakaahua hautanga, tau-a-ira (kia 3 ngā mati ā-ira) me ngā ōrau.

Tautohu, te pānui, te tuhi, te whakaahua hautanga, tau-a-ira me ngā ōrau.

Whakatairite, te raupapa me te huri i ngā hautau, tau-a-ira (kia 3 ngā mati ā-ira) me ngā ōrau.

Whakatairite, te raupapa me te huri i ngā hautau, tau-a-ira me ngā ōrau.

Kimi i te rahinga mena e mōhio ana ki te hautanga māmā, te tau ā-ira rānei o te rahinga:
h.t., 25% o te rahinga, ko te \$100, nō reira, he aha te rahinga?

Kimi i te rahinga mena e mōhio ana ki te hautanga, te tau ā-ira rānei o te rahinga:
h.t., 75% o te rahinga, ko te \$45, nō reira, he aha te rahinga?

Ngā tini mata o te Reo Pāngarau

Ōrau, ōrautanga, katoa, hautanga, tau hautanga, tau ā-ira, tau hautau, ōrite

Mā te kaiako

Ngā Rongoā me ngā paku hapa

Rapanga 6

E haere ana a Alani ki tētahi huihuinga whānau i Tuvalu. He moni tāna kua penapenatia. I Tuvalu ka whakamahia e rātau he tāra Ahitereiria engari ko a rātau ake moni. Ko te utu whakawhiti ko te \$1 Aotearoa mō te \$.9301 Ahitereiria.

E hia ngā moni o Ahitereiria ka riro i a ia hei whakawhiti mo te NZ\$10? NZ\$100? NZ\$550?

I Hamoa ko te utu whakawhiti ko te \$1 Aotearoa mo te 1.5204 tala. E hia ngā utu ka riro i a ia hei utu mo te NZ\$10? NZ\$100? NZ\$550?

Hei āwhina i te kaiako

I mua i tō whakarewatanga i te tūmahi, tuhia te aho whārite e whai ake nei.

Pātai atu ki ngā ākonga kia whakaoti i ia mea i mua i te tuhi i te panuku, me te tono kia kōrerorero me te tāutu i ngā tauira e kitea ana e rātou:

$$3 \times 4 =$$

$$3 \times 8 =$$

$$6 \times 4 =$$

$$6 \times 8 =$$

Tonoa ngā ākonga kia kōrerorero i ngā mea e kitea ana e rātou me te miramira i te pātahitanga whakarea o ngā wā e rua (te whakarua rānei i waenga i ia wā) ka taea e rātou te whakamahi hei ako i ā rātou take whakareatanga. Miramiratia mō te mea whakamutunga, ka taea e rātou te whakamahi i te $3 \times 4 = 12$ me te taurua e rua nā te mea ko te $3 \times 2 = 6$ me te $4 \times 2 = 8$

Whakangāwari i ngā ākonga kia kite ina whakarea ngā ā-ira, kei te whakamahi koe i ngā mana tekau.

Tūmanako kia tohu ngā ākonga mā te whakamahi i te uara wāhi me ngā tohu.

Wā toha

Tīpakohia ngā ākonga hei tiritiri e āhei ana ki te whakamārama me te whakatika i ō rātou whakaaro mā te whakamahi i ngā whakarōpū (mana) o te tekau me te rau.

Whakaaro Matua o te Ao Pāngarau

Ko te ā-ira tētahi atu ingoa mō tētahi hautanga, ā, ka taea te pāhono ki te pūwāhi ōrite i te raina tau.

Ko te ōrau tētahi atu huarahi ki te tuhi i tētahi ā-ira e whakataurite ana i tētahi wāhanga ki tētahi katoa e 100 ana te katoa, ā, ka taea te pāhono ki te pūwāhi ōrite i te raina tau.

E pā ana te ōrau ki te rahi o te katoa.

Ko te ōrau he momo ōwehenga motuhake e whakaritea ai tētahi wāhanga ki te katoa, ā, ko te katoa ko te 100.

Ka taea te pāhono i ngā whakamāramatanga rerekē o te ao tūturu ki te hua o te tau oti me te hautanga (ā-ira), te hautanga (ā-ira) me te tau katoa, me te hautanga me te hautanga (ā-ira me te ā-ira).

Ka taea te pāhono i ngā whakamāramatanga rerekē o te ao tūturu ki ngā tatauranga whakawehenga e pā ana ki ngā hautanga (ā-ira).

He ōrite ngā pānga o ngā mahi mō te tāpiri me te tangohanga ki ngā hautanga me ngā ā-ira ki ērā me ngā tau oti.

Ka hurihia te wehenga me te whakawehenga ā-ira ki tētahi tatauranga ōrite me te whakawehenga tau katoa mā te whakarea i te whakawehenga me te moni hua ki te mana tika o te tekau.

Hono

I a koe e whakaoti ana i ēnei, whakaarohia tō rātou wāhi ki te tūtohi uara wāhi.

$$9 \times 1 =$$

$$9 \times 10 =$$

$$9 \times 100 =$$

$$.9 \times 1 =$$

$$.9 \times 10 =$$

$$.9 \times 100 =$$

Ka taea e koe te tāutu me te whakamārama i te tauira e kitea ana e koe i roto i ngā nekehanga o te uara wāhi?

Whainganga ako

Ka ako ngā mokopuna ki te:

Whakamārama, whakatautika hoki i te whakataurite o tētahi wāhanga ki te katoa.

Whakaaturia te whakaaro mā te whakamahi i ngā momo tuhipoka rerekē, tae atu ki ngā tohu me ngā kupu.

Whakaotia ngā raruraru e pā ana ki ngā tau ā-ira mā te whakarea me te whakamārama me te whakatautika i te rongōā.

Tohu whakaaro hei whakamārama me te whakatautika i te uara wāhi e pā ana ki ngā tau ā-ira.

Rapanga Motuhake

Whakaotia ēnei e whai ake nei:

$$.5 + .05 =$$

$$.5 + .505 =$$

$$.5 + .5555 =$$

$$.3 + .03 =$$

$$.3 + .0303 =$$

$$.03 + .3033 =$$

$$.7 + .07 =$$

$$.7 + 0.707 =$$

$$1 \times .5 =$$

$$1 \times .05 =$$

$$1 \times .005 =$$

$$1 \times .000505 =$$

Ngā tini mata o te Marautanga

Te Hanga o ngā Tau 7/8

Tautohu, te pānui, te tuhi, te whakatairite me te raupapa tauoti ki ngā pū o te 10:
h.t., $10,000 = 10^4$

Tautohu, te pānui, te tuhi, te whakatairite me te raupapa tauoti me ngā tau-a-ira ki ngā pū o te 10:
h.t., $0.01 = 1 \div 100 = 10^{-2}$

Ngā Paheko Tau 7

Whakaāwhiwhi i ngā tau-ā-ira ki te hautekau, haurau, tauoti rānei e pātata ana

Whakarea tauoti.

Nga Tau Whakatau Tau 7/8

Tautohu, te pānui, te tuhi, te whakaahua hautanga, tau-a-ira (kia 3 ngā mati ā-ira) me ngā ōrau.

Tautohu, te pānui, te tuhi, te whakaahua hautanga, tau-a-ira me ngā ōrau.

Whakatairite, te raupapa me te huri i ngā hautau, tau-a-ira (kia 3 ngā mati ā-ira) me ngā ōrau.

Whakatairite, te raupapa me te huri i ngā hautau, tau-a-ira me ngā ōrau.

Kimi i te rahinga mena e mōhio ana ki te hautanga māmā, te tau ā-ira rānei o te rahinga:

h.t., 25% o te rahinga, ko te \$100, nō reira, he aha te rahinga?

Kimi i te rahinga mena e mōhio ana ki te hautanga, te tau ā-ira rānei o te rahinga:
h.t., 75% o te rahinga, ko te \$45, nō reira, he aha te rahinga?

Mā te kaiako

Ngā Rongoā me ngā paku hapa

Ngā tini mata o te Marautanga

Matau Ahumoni Tau 7/8

Tātai utu me te wāwāhinga moni ahakoa te rahinga o te moni.

*Tātai i te whakahekenga ōrau mō ngā rahinga tāra:
h.t., te 35% o te \$180?*

*Waihanga me te whakatairite mahere ahumoni ā-wiki, ā-marama, ā-tau:
h.t., te penapena pūtea, ngā mahere utu waea pūkoro, ngā mahere pūtea me ngā hoko harangote.*

Tātai whakahekenga ōrau.

Ngā tini mata o te Reo Pāngarau

Ōrau, ōrautanga, katoa, hautanga, tau hautanga, tau ā-ira, tau hautau, ōrite

Rapanga 7

Whakatau tata ki hea haere ai te ira ira, kātahi ka tātai kia tirohia kua purua e koe ki te wāhi tika.

$$2.4 \times 200 = 480$$

$$0.218 \times 1 = 2180$$

$$0.24 \times 0.63 = 1512$$

$$0.108 \times 0.19 = 002052$$

$$0.99 \times 0.999 = 098901$$

He aha tāu i kite ai?

Hei āwhina i te kaiako

I mua i tō whakarewatanga i te tūmahi, tuhia te aho whārite e whai ake nei.

Tonoa ngā ākongā ki te whakaoti i ia mea i mua i te tuhi i te panuku, ā, tonoa rātou kia kōrerorea, kia tautohu hoki i ngā taurira e kitea ana e rātou:

$$3 \times 7 =$$

$$6 \times 7 =$$

$$9 \times 7 =$$

Pātai atu ki ngā ākongā kia kōrerorero i ngā mea e kitea ana e rātou me te miramira i te pātahitanga whakarea o ngā wā rua (te whakarua rānei i waenga i ia wā) me ngā wā 3 i waenganui i te whārite tuatahi me te whārite whakamutunga ka taea e rātou te whakamahi hei ako i ā rātou take whakareatanga.

Miramiratia mō te mea whakamutunga, ka taea e rātou te whakamahi i te $3 \times 7 = 21$ me te takitoru mō te $9 \times 7 = 63$

Whakangāwari i ngā ākongā kia mōhio ina whakarea tētahi tau hauora ki tētahi tau hauora me whakatau tata te rahi o te hua hei tiroiro i te tika o tā rātou whakautu i mua i te mahi i te mahi.

Wā toha

Tīpakohia ngā ākongā hei tiritiri e āhei ana ki te whakamārama me te whakatika i ō rātou whakaaro mā te whakamahi i ngā whakaaturanga tae atu ki te uara wāhi me te tuhipoka

Whakaaro Matua o te Ao Pāngarau

Ko te ā-ira tētahi atu ingoa mō tētahi hautanga, ā, ka taea te pāhono ki te pūwāhi ōrite i te raina tau.

Ko te ōrau tētahi atu huarahi ki te tuhi i tētahi ā-ira e whakataurite ana i tētahi wāhanga ki tētahi katoa e 100 ana te katoa, ā, ka taea te pāhono ki te pūwāhi ōrite i te raina tau.

E pā ana te ōrau ki te rahi o te katoa.

Ko te ōrau he momo ōwehenga motuhake e whakaritea ai tētahi wāhanga ki te katoa, ā, ko te katoa ko te 100.

Ka taea te pāhono i ngā whakamāramatanga rerekē o te ao tūturu ki te hua o te tau oti me te hautanga (ā-ira), te hautanga (ā-ira) me te tau katoa.

Ka taea te pāhono i ngā whakamāramatanga rerekē o te ao tūturu ki ngā tatauranga whakawehenga e pā ana ki ngā hautanga (ā-ira).

He ōrite ngā pānga o ngā mahi mō te tāpiri me te tangohanga ki ngā hautanga me ngā ā-ira ki ērā me ngā tau oti.

Ka hurihia te wehenga me te whakawehenga ā-ira ki tētahi tatauranga ōrite me te whakawehenga tau katoa mā te whakarea i te whakawehenga me te moni hua ki te mana tika o te tekau.

Hono

Ka aha te hua ina whakareatia e koe te tau oti ki te ā-ira? Ka aha te hua ina whakareatia e koe te ā-ira ki te ā-ira? Whakamahia he tauira hei whakamātau i ō whakamārama.

Whainganga ako Ka ako ngā mokopuna ki te:

Whakaaturia te whakaaro mā te whakamahi i ngā momo tuhipoka rerekē, tae atu ki ngā tohu me ngā kupu.

Whakaotia ngā raruraru e pā ana ki ngā tau ā-ira mā te whakarea me te whakamārama me te whakatautika i te rongō.

Tohu whakaaro hei whakamārama me te whakatautika i te uara wāhi e pā ana ki ngā tau ā-ira.

Rapanga Motuhake

Whakaotia ēnei whārite ki te tau oti tata. Whakatau tata te tau oti tata, kātahi ka taki mēnā i tata tō whakatau tata.

1. $2.9 + .9 + .199$
2. $.0009 + 1.0009$
3. $.5 + .034 + 3.33$
4. $6 - .0009$
5. $.8 - .008$
6. $34.267 - .9$
7. $5 \times .9$
8. $.08 \times 1$
9. 2.8×10
10. $.89 \times 2$

Ngā tini mata o te Marautanga

Te Hanga o ngā Tau 7/8

Tautohu, te pānui, te tuhi, te whakatairite me te raupapa tauoti ki ngā pū o te 10:
h.t.; $10,000 = 10^4$

Tautohu, te pānui, te tuhi, te whakatairite me te raupapa tauoti me ngā tau-a-ira ki ngā pū o te 10:
h.t., $0.01 = 1 \div 100 = 10^{-2}$

Ngā Paheko Tau 7

Whakaāwhiwhi i ngā tau-ā-ira ki te hautekau, haurau, tauoti rānei e pātata ana

Whakarea tauoti.

Nga Tau Whakatau Tau 7/8

Tautohu, te pānui, te tuhi, te whakaahua hautanga, tau-a-ira (kia 3 ngā mati ā-ira) me ngā ōrau.

Tautohu, te pānui, te tuhi, te whakaahua hautanga, tau-a-ira me ngā ōrau.

Whakatairite, te raupapa me te huri i ngā hautau, tau-a-ira (kia 3 ngā mati ā-ira) me ngā ōrau.

Whakatairite, te raupapa me te huri i ngā hautau, tau-a-ira me ngā ōrau.

Kimi i te rahinga mena e mōhio ana ki te hautanga māmā, te tau ā-ira rānei o te rahinga:
h.t., 25% o te rahinga, ko te \$100, nō reira, he aha te rahinga?

Kimi i te rahinga mena e mōhio ana ki te hautanga, te tau ā-ira rānei o te rahinga:
h.t., 75% o te rahinga, ko te \$45, nō reira, he aha te rahinga?

Mā te kaiako

Ngā Rongoā me ngā paku hapa

Ngā tini mata o te Marautanga

Matau Ahumoni Tau 7/8

Tātai utu me te wāwāhinga moni ahakoa te rahinga o te moni.

Tātai i te whakahekenga o rau mō ngā rahinga tāra: h.t., te 35% o te \$180?

Waihanga me te whakatairite mahere ahumoni ā-wiki, ā-marama, ā-tau: h.t., te penapena pūtea, ngā mahere utu waea pūkoro, ngā mahere pūtea me ngā hoko harangote.

Tātai whakahekenga o rau.

Ngā tini mata o te Reo Pāngarau

Orau, o rautangā, katoa, hautangā, tau hautangā, tau ā-ira, tau hautau, o rite,

Rapanga 8

Ka haere te tereina o Huia i te 121km mai i Kirikiriroa ki Tamaki Makaurau. E 1.5 haora te roa ki te whakaoti i te haerenga. He aha te mokatere toharite i ngā kiromita ia haora?

Ināianei whakamahia te rautaki ōrite i whakamahia e koe hei whakaoti i tēnei whārite. Whakatau tata i te tuatahi, kātahi ka mahi i te tatauranga.

$$35.6 \div 1.92$$

Kia rite ki te whakamārama me te whakatika i tō whakaaro.

Hei āwhina i te kaiako

I mua i tō whakarewatanga i te tūmahi, tuhia te aho whārite e whai ake nei.

Tonoa ngā ākonga ki te whakaoti i ia mea i mua i te tuhi i te panuku, ka pātai atu ki a rātou kia kōrerorero me te tautohu i ngā tauira e kitea ana e rātou:

$$2 \times 7 =$$

$$4 \times 7 =$$

$$8 \times 7 =$$

$$3 \times 9 =$$

$$6 \times 9 =$$

Pātai atu ki ngā ākonga kia kōrerorero i ngā mea e kitea ana e rātou me te miramira i te pātahitanga whakarea o ngā wā e rua (te whakarua rānei i waenga i ia mea) a ka taea e rātou te whakamahi hei ako i ā rātou take whakarea.

Whakangāwari i ngā ākonga kia kite i te hiahia ki te whakaaro ki te whakamahi i te whakareatanga me te whakatata ki te 120km

Tirohia ngā ākonga i te raruraru tuarua e huri ana ki te 36 me te 2 i mua i te whakaoti.

Wā toha

Tīpakohia ngā ākonga hei tiritiri e āhei ana ki te whakamārama me te whakatika i ō rātou whakaaro mā te whakamahi i ngā huarahi hei whakaatu i ō rātou whakaaro.

Whakaaro Matua o te Ao Pāngarau

Ko te ā-ira tētahi atu ingoa mō tētahi hautanga, ā, ka taea te pāhono ki te pūwāhi ōrite i te raina tau.

Ko te ōrau tētahi atu huarahi ki te tuhi i tētahi ā-ira e whakataurite ana i tētahi wāhanga ki tētahi katoa e 100 ana te katoa, ā, ka taea te pāhono ki te pūwāhi ōrite i te raina tau.

E pā ana te ōrau ki te rahi o te katoa.

Ko te ōrau he momo ōwehenga motuhake e whakaritea ai tētahi wāhanga ki te katoa, ā, ko te katoa ko te 100.

Ka taea te pāhono i ngā whakamāramatanga rerekē o te ao tūturu ki te hua o te tau oti me te hautanga (ā-ira), te hautanga (ā-ira) me te tau katoa, me te hautanga me te hautanga (ā-ira me te ā-ira).

Ka taea te pāhono i ngā whakamāramatanga rerekē o te ao tūturu ki ngā tatauranga whakawehenga e pā ana ki ngā hautanga (ā-ira).

He ōrite ngā pānga o ngā mahi mō te tāpiri me te tangohanga ki ngā hautanga me ngā ā-ira ki ērā me ngā tau oti.

Ka hurihia te wehenga me te whakawehenga ā-ira ki tētahi tatauranga ōrite me te whakawehenga tau katoa mā te whakarea i te whakawehenga me te moni hua ki te mana tika o te tekau.

Ko te ōwehenga he whakataurite whakarea o ngā rahinga; He rerekē ngā momo whakataurite ka taea te whakaatu hei ōwehenga.

Hono

$136 \div 6 = 22666$ e tika ana ki ngā mati e rima engari kāore he ira ira.

Ka taea e koe te whakamahi i ēnei mōhiohio anake hei whakaoti i ēnei e whai ake nei?

$$136 \div 0.6, 1.36 \div 6, 13.6 \div 0.6, 1360 \div 60$$

Ka taea e koe te whakamārama i ngā tauira e kitea ana e koe mā te whakamahi i te uara wāhi?

Whainganga ako Ka ako ngā mokopuna ki te:

Kimihia ngā utu ōrite.

Whakaaturia te whakaaro mā te whakamahi i ngā momo tuhipoka rerekē, tae atu ki ngā tohu me ngā kupu.

Whakamahia te māramatanga whakarea o te uara wāhi hei whakaoti i ngā raruraru whakarea me te wehenga ki ngā tau ā-ira.

Tohu whakaaro hei whakamārama me te whakatautika i te uara wāhi e pā ana ki ngā tau ā-ira.

Whakaaro Matua o te Ao Pāngarau

Ka hoatu e ngā ōwehenga ngā rahi pātahi o ngā rahinga e whakatauritea ana, ehara i te mea ko ngā rahi tūturu.

Ka taea te whakapuaki i ngā ōwehenga hei wae mā te kimi i tētahi ōwehenga ōrite ki te wā kotahi te kupu tuarua

Ngā tini mata o te Marautanga

Te Hanga o ngā Tau 7/8

*Tautohu, te pānui, te tuhi, te whakatairite me te raupapa tauoti ki ngā pū o te 10:
h.t. $10,000 = 10^4$*

*Tautohu, te pānui, te tuhi, te whakatairite me te raupapa tauoti me ngā tau-a-ira ki ngā pū o te 10:
h.t., $0.01 = 1-100 = 10^{-2}$*

Ngā Paheko Tau 7

Whakaāwhiwhi i ngā tau-ā-ira ki te hautekau, haurau, tauoti rānei e pātata ana

Whakarea tauoti.

Nga Tau Whakatau Tau 7/8

Tautohu, te pānui, te tuhi, te whakaahua hautanga, tau-a-ira (kia 3 ngā mati ā-ira) me ngā ōrau.

Tautohu, te pānui, te tuhi, te whakaahua hautanga, tau-a-ira me ngā ōrau.

Whakatairite, te raupapa me te huri i ngā hautau, tau-a-ira (kia 3 ngā mati ā-ira) me ngā ōrau.

Whakatairite, te raupapa me te huri i ngā hautau, tau-a-ira me ngā ōrau.

Rapanga Motuhake

Hangaia he huānga me te whakapūkete i ēnei e whai ake nei hei rerenga tau whakarea, whakawehenga hoki:

$$1 \text{ me } \frac{5}{10}$$

$$12 \text{ me } \frac{7}{10}$$

$$23 \text{ me } \frac{3}{10}$$

$$4 \text{ me } \frac{83}{100}$$

$$1 \text{ me } \frac{10}{100}$$

$$2 \text{ me } \frac{3}{100}$$

$$9 \text{ me } \frac{831}{1000}$$

$$5 \text{ me } \frac{83}{1000}$$

$$4 \text{ me } \frac{1}{1000}$$

He aha te mati whakatekau o ēnei?

9.92

0.02

7.816

0.30198

1.33333

1.00009

Ko tēhea 2 te uara nui rawa atu i te 0.022? Whakaaturia ō whakaaro hei whakamārama i ō whakaaro.

E hia ngā mano kei roto i te 0.022?

Ngā tini mata o te Marautanga

Nga Tau Whakataua Tau 7/8

Kimi i te rahinga mena e mōhio ana ki te hautanga māmā, te tau ā-ira rānei o te rahinga:

h.t., 25% o te rahinga, ko te \$100, nō reira, he aha te rahinga?

Kimi i te rahinga mena e mōhio ana ki te hautanga, te tau ā-ira rānei o te rahinga: h.t., 75% o te rahinga, ko te \$45, nō reira, he aha te rahinga?

Matau Ahumoni Tau 7/8

Tātai utu me te wāwāhinga moni ahakoa te rahinga o te moni.

Tātai i te whakahekenga ōrau mō ngā rahinga tāra: h.t., te 35% o te \$180?

Waihanga me te whakatairite mahere ahumoni ā-wiki, ā-marama, ā-tau: h.t., te penapena pūtea, ngā mahere utu waea pūkoro, ngā mahere pūtea me ngā hoko harangote.

Tātai whakahekenga ōrau.

Ngā tini mata o te Reo Pāngarau

Ōrau, ōrautanga, katoa, hautanga, tau hautanga, tau ā-ira, tau hautau, ōrite,

Mā te kaiako

Ngā Rongoā me ngā paku hapa

Rapanga 9

Ka penapena te whare parāoa o te rohe i te nui o te paraoa pokepoke ina hiahiatia. Mēnā ka whakamahia e rātou e 28 kapu parāoa, ā, ko te ōwehenga o ngā kapu parāoa ki te wai ko te 7:4. E hia te nui o te wai e whakamahia ana e rātou?

Ka aha mēnā ka whakamahia e rātou e 80 kapu parāoa? Ko te ōwehenga o ngā kapu parāoa ki ngā kapu wai e whakamahia ana e rātou ko te 10:8. E hia te nui o te wai me whakamahi?

Ka aha mēnā ka whakamahia e rātou e 78 kapu parāoa? Ko te ōwehenga o ngā kapu parāoa ki ngā kapu wai e whakamahia ana e rātou ko te 10:3. E hia te nui o te wai me whakamahi?

Hei āwhina i te kaiako

Whakangāwari i ngā ākonga kia kite i te hiahia kia mau tonu te whārite o ngā taha e rua i roto i tētahi whakaaturanga mārama

Whakangāwari i ngā ākonga kia mārama ina whakaarohia ngā ōwehenga, ko te whanaungatanga i waenga i ngā rahinga e rua e taurangi ana puta noa i ēnei āhuetanga.

Tūmanako kia tohu ngā ākonga mā te whakamahi i tētahi tikanga nahanaha o te hopu i ō rātou whakaaro hei ōwehenga

Wā toha

Tīpakohia ngā ākonga hei tiritiri e āhei ana ki te whakamārama me te whakatika i ō rātou whakaaro mā te whakamahi i ngā huarahi hei whakaatu i ō rātou whakaaro.

Hono

Ko te ōwehenga o ngā pīni tiēre kōwhai ki ngā pīni tiēre whero ko te 5:6. He aha te hautanga o te pīni tiēre kōwhai ki te pīni tiēre whero?

Ko te ōwehenga o ngā pīni tiēre kōwhai ki ngā pīni tiēre whero ko te 10:20. He aha te hautanga o te pīni tiēre kōwhai ki te pīni tiēre whero?

Ko te ōwehenga o ngā pīni tiēre kōwhai ki ngā pīni tiēre whero ko te 1:2. He aha te hautanga o te pīni tiēre kōwhai ki te pīni tiēre whero?

He aha te taura e kitea ana e koe? Ka taea e koe te whakaaro mo tāu i kite ai?

Whakaaro Matua o te Ao Pāngarau

Ko te ā-ira tētahi atu ingoa mō tētahi hautanga, ā, ka taea te pāhono ki te pūwāhi ōrite i te raina tau.

Ko te ōrau tētahi atu huarahi ki te tuhi i tētahi ā-ira e whakataurite ana i tētahi wāhanga ki tētahi katoa e 100 ana te katoa, ā, ka taea te pāhono ki te pūwāhi ōrite i te raina tau.

E pā ana te ōrau ki te rahi o te katoa.

Ko te ōrau he momo ōwehenga motuhake e whakaritea ai tētahi wāhanga ki te katoa, ā, ko te katoa ko te 100.

Ka taea te pāhono i ngā whakamāramatanga rerekē o te ao tūturu ki te hua o te tau oti me te hautanga (ā-ira), te hautanga (ā-ira) me te tau katoa, me te hautanga me te hautanga (ā-ira me te ā-ira).

Ka taea te pāhono i ngā whakamāramatanga rerekē o te ao tūturu ki ngā tatauranga whakawehenga e pā ana ki ngā hautanga (ā-ira).

He ōrite ngā pānga o ngā mahi mō te tāpiri me te tangohanga ki ngā hautanga me ngā ā-ira ki ērā me ngā tau oti.

Ka hurihia te wehenga me te whakawehenga ā-ira ki tētahi tatauranga ōrite me te whakawehenga tau katoa mā te whakarea i te whakawehenga me te moni hua ki te mana tika o te tekau.

Whaingā ako Ka ako ngā mokopuna ki te:

Kimihia ngā ōwehenga ōrite.

Whakaaturia te whakaaro mā te whakamahi i ngā momo tuhipoka rerekē, tae atu ki ngā tohu me ngā kupu.

Whakamahia te māramatanga whakarea o te uara wāhi hei whakaoti i ngā raruraru whakarea me te wehenga ki ngā tau ā-ira.

Tohu whakaaro hei whakamārama me te whakatautika i te uara wāhi e pā ana ki ngā tau ā-ira.

Rapanga Motuhake

I a koe e whakaoti ana i ēnei, whakaarohia tō rātou wāhi ki te tūtohi uara wāhi.

1. 32.8×6
2. 73×9
3. 1.00001×10
4. $745 + .9$
5. $1.43 + 1.6$
6. $4.0009 + 1.9991$
7. $6.5 - 1.9$
8. $12.32 - 0.31$
9. $33.1 - .99$

Tautohu, tāhopu, me te whakamārama i te tauira e kitea ana e koe i roto i ngā nekehanga o te uara wāhi?

Whakaaro Matua o te Ao Pāngarau

Ko te ōwehenga he whakataurite whakarea o ngā rahinga; He rerekē ngā momo whakataurite ka taea te whakaatu hei ōwehenga.

Ka hoatu e ngā ōwehenga ngā rahi pātahi o ngā rahinga e whakatauritea ana, ehara i te mea ko ngā rahi tūturu.

Ka taea te whakapuaki i ngā ōwehenga hei wae mā te kimi i tētahi ōwehenga ōrite ki te wā kotahi te kupu tuarua

Ngā tini mata o te Marautanga

Te Hanga o ngā Tau 7/8

*Tautohu, te pānui, te tuhi, te whakataurite me te raupapa tauoti ki ngā pū o te 10:
h.t; $10,000 = 10^4$*

*Tautohu, te pānui, te tuhi, te whakataurite me te raupapa tauoti me ngā tau-a-ira ki ngā pū o te 10:
h.t., $0.01 = 1 \div 100 = 10^{-2}$*

Ngā Paheko Tau 7

Whakaāwhiwhi i ngā tau-ā-ira ki te hautekau, haurau, tauoti rānei e pātata ana

Whakarea tauoti.

Nga Tau Whakatau Tau 7/8

Tautohu, te pānui, te tuhi, te whakaahua hautanga, tau-a-ira (kia 3 ngā mati ā-ira) me ngā ōrau.

Tautohu, te pānui, te tuhi, te whakaahua hautanga, tau-a-ira me ngā ōrau.

Mā te kaiako

Ngā Rongoā me ngā paku hapa

Ngā tini mata o te Marautanga

Ngā Tau Whakataua Tau 7/8

Whakatairite, te raupapa me te huri i ngā hautau, tau-a-ira (kia 3 ngā mati ā-ira) me ngā ōrau.

Whakatairite, te raupapa me te huri i ngā hautau, tau-a-ira me ngā ōrau.

Kimi i te rahinga mena e mōhio ana kī te hautanga māmā, te tau ā-ira rānei o te rahinga:

h.t., 25% o te rahinga, ko te \$100, nō reira, he aha te rahinga?

Kimi i te rahinga mena e mōhio ana kī te hautanga, te tau ā-ira rānei o te rahinga:
h.t., 75% o te rahinga, ko te \$45, nō reira, he aha te rahinga?

Mataua Ahumoni Tau 7/8

Tātai utu me te wāwāhinga moni ahakoa te rahinga o te moni.

Tātai i te whakahekenga ōrau mō ngā rahinga tāra:
h.t., te 35% o te \$180?

Waihanga me te whakatairite mahere ahumoni ā-wiki, ā-marama, ā-tau:
h.t., te penapena pūtea, ngā mahere utu waea pūkoru, ngā mahere pūtea me ngā hoko harangote.

Tātai whakahekenga ōrau.

Ngā tini mata o te Reo Pāngarau

Ōrau, ōrautanga, katoa, hautanga, tau hautanga, tau hautanga, tau ā-ira, tau haumarua, ōrite, ōwehenga

Rapanga 10

Kei te penapena te Māmā o Tom mō tētahi waea hōu e utu ana i te \$1650. E whiwhi ana ia i te \$3500 ia marama.

Ka whakapaua e ia ana moni ki ngā pire, kai me ētahi atu mea i roto i te ōwehenga o te 6:4:5.

O ngā moni e whakapaua ana e ia ki ngā tāpiritanga, me whakapau e ia te 80%, ā, ka hoatu e ia te 20% ki ana penapena mō te waea. Pēhea te roa o tana penapena mō tana waea hou?

Hei āwhina i te kaiako

I mua i te whakarewatanga, hoatu ki ngā ākonga he mātiti mō ngā ripanga wā 1 ki te 10 me te tono i ngā ākonga kia whakaoti me te hopu i tō rātou wā (i te huarahi tūmatanui).

<http://www.mental-arithmetic.co.uk/multiplication-grids-pdfgenerator.htm>

Ko te whāinga kia oti te mātiti i raro iho i te 5 meneti, nā reira tū i te 5 meneti. Tonoa rātou ki te hopu i tō rātou wā, i te nui rānei o ngā mea kua oti i a rātou. Pātai atu ki a rātou kia tirohia mēnā kua pai ake tō rātou wā, kua oti rānei i a rātou.

Whakangāwari i ngā ākonga kia kite i te hiahia kia mau tonu te whārite o ngā taha e rua i roto i tētahi whakaaturanga mārama

Kia mōhio ki ngā ākonga e whakamahi ana i te whakaaro ōpaki i mua i te whakaaro ōkawa

Tūmanako kia tohu ngā ākonga mā te whakamahi i tētahi tikanga nahanaha o te hopu i tō rātou whakaaro hei ōwehenga

Wā toha

Tīpakohia ngā ākonga hei tiritiri e āhei ana ki te whakamārama me te whakatika i tō rātou whakaaro mā te whakamahi i ngā huarahi hei whakaatu i tō rātou whakaaro.

Hono

I roto i tētahi Pokapū Tiaki Rā, ko te ōwehenga o ngā tamariki ki ngā pakeke ko te 4:1. Ko te ōwehenga o ngā tāne pakeke ki ngā taitama ko te 1:6, ā, ko te ōwehenga o ngā wāhine pakeke ki ngā kōtiro taitamariki ko te 1:2.

He aha te hautanga o te iwi i te Pokapū Tiaki Rā he tamariki?

Whakaaro Matua o te Ao Pāngarau

Ko te ā-ira tētahi atu ingoa mō tētahi hautanga, ā, ka taea te pāhono ki te pūwāhi ōrite i te raina tau.

Ko te ōrau tētahi atu huarahi ki te tuhi i tētahi ā-ira e whakataurite ana i tētahi wāhanga ki tētahi katoa e 100 ana te katoa, ā, ka taea te pāhono ki te pūwāhi ōrite i te raina tau.

E pā ana te ōrau ki te rahi o te katoa.

Ko te ōrau he momo ōwehenga motuhake e whakaritea ai tētahi wāhanga ki te katoa, ā, ko te katoa ko te 100.

Ka taea te pāhono i ngā whakamāramatanga rerekē o te ao tūturu ki te hua o te tau oti me te hautanga (ā-ira), te hautanga (ā-ira) me te tau katoa, me te hautanga me te hautanga (ā-ira me te ā-ira).

Ka taea te pāhono i ngā whakamāramatanga rerekē o te ao tūturu ki ngā tatauranga whakawehenga e pā ana ki ngā hautanga (ā-ira).

He ōrite ngā pānga o ngā mahi mō te tāpiri me te tangohanga ki ngā hautanga me ngā ā-ira ki ērā me ngā tau oti.

Ka hurihia te wehenga me te whakawehenga ā-ira ki tētahi tatauranga ōrite me te whakawehenga tau katoa mā te whakarea i te whakawehenga me te moni hua ki te mana tika o te tekau.

Ka taea te whakamahi i ngā hautanga tohu pēnei i te $\frac{1}{2}$ (0.5) me te $\frac{1}{4}$ (0.25) hei whakatau tata i ngā tatauranga e pā ana ki ngā hautanga me ngā ā-ira.

Whainganga ako

Ka ako ngā mokopuna ki te:

Kimihia ngā ōwehenga ōrite.

Whakaaturia te whakaaro mā te whakamahi i ngā momo tuhipoka rerekē, tae atu ki ngā tohu me ngā kupu.

Whakamahia te māramatanga whakarea o te uara wāhi hei whakaoti i ngā raruraru whakarea me te wehenga ki ngā tau ā-ira.

Tohu whakaaro hei whakamārama me te whakatautika i te uara wāhi e pā ana ki ngā tau ā-ira.

Rapanga Motuhake

1) I runga i te pāmu, ko te ōwehenga o te kau ki te hipi ko te 6:8. He aha te hautanga o te kau ki te hipi?

2) I runga i te pāmu, ko te ōwehenga o te kau ki te hipi ko te 10:30. He aha te hautanga o te kau ki te hipi?

3) I runga i te pāmu, ko te ōwehenga o te kau ki te hipi ko te 2:3. He aha te hautanga o te kau ki te hipi?

4) I runga i te pāmu ko te ōwehenga o te kau ki te hipi ko te 5:6. He aha te hautanga o te kau ki te hipi?

5) I runga i te pāmu, ko te ōwehenga o te kau ki te hipi ko te 20:50. He aha te hautanga o te kau ki te hipi?

He aha te tauira e kitea ana e koe? Ka taea e koe te whakaaro mo tāu i kite ai? Tuhia to whakaaro.

Whakaaro Matua o te Ao Pāngarau

Ko te ōwehenga he whakataurite whakarea o ngā rahinga; He rerekē ngā momo whakataurite ka taea te whakaatu hei ōwehenga.

Ka hoatu e ngā ōwehenga ngā rahi pātahi o ngā rahinga e whakataurite ana, ehara i te mea ko ngā rahi tūturu.

Ka taea te whakapuaki i ngā ōwehenga hei wae mā te kimi i tētahi ōwehenga ōrite ki te wā kotahi te kupu tuarua.

Ngā tini mata o te Marautanga

Te Hanga o ngā Tau 7/8

*Tautohu, te pānui, te tuhi, te whakataurite me te raupapa tauoti ki ngā pū o te 10:
h.t. $10,000 = 10^4$*

*Tautohu, te pānui, te tuhi, te whakataurite me te raupapa tauoti me ngā tau-a-ira ki ngā pū o te 10:
h.t., $0.01 = 1-100 = 10^{-2}$*

Ngā Paheko Tau 7

Whakaāwhiwhi i ngā tau-ā-ira ki te hautekau, haurau, tauoti rānei e pātata ana

Whakarea tauoti.

Nga Tau Whakatau Tau 7/8

Tautohu, te pānui, te tuhi, te whakaahua hautanga, tau-a-ira (kia 3 ngā mati ā-ira) me ngā ōrau.

Tautohu, te pānui, te tuhi, te whakaahua hautanga, tau-a-ira me ngā ōrau.

Whakataurite, te raupapa me te huri i ngā hautau, tau-a-ira (kia 3 ngā mati ā-ira) me ngā ōrau.

Whakataurite, te raupapa me te huri i ngā hautau, tau-a-ira me ngā ōrau.

Mā te kaiako

Ngā Rongoā me ngā paku hapa

Ngā tini mata o te Marautanga

Nga Tau Whakatau Tau 7/8

Kimi i te rahinga mena e mōhio ana ki te hautanga māmā, te tau ā-ira rānei o te rahinga:

h.t., 25% o te rahinga, ko te \$100, nō reira, he aha te rahinga?

Kimi i te rahinga mena e mōhio ana ki te hautanga, te tau ā-ira rānei o te rahinga:

h.t., 75% o te rahinga, ko te \$45, nō reira, he aha te rahinga?

Matau Ahumoni Tau 7/8

Tātai utu me te wāwāhinga moni ahakoa te rahinga o te moni.

Tātai i te whakahekenga ōrau mō ngā rahinga tāra: h.t., te 35% o te \$180?

Waihanga me te whakatairite mahere ahumoni ā-wiki, ā-marama, ā-tau:

h.t., te penapena pūtea, ngā mahere utu waea pūkoru, ngā mahere pūtea me ngā hoko harangote.

Tātai whakahekenga ōrau.

Ngā tini mata o te Reo Pāngarau

Ōrau, ōrautanga, katoa, hautanga, tau hautanga, tau ā-ira, tau hautau, ōrite,

Rapanga 11

Whakakapia te pū ki tētahi tau

$$m \times .20 = 28$$

$$j \times .5 = 25$$

$$346 = p \times 10 + y \times 100$$

$$2.333 = 64 \div a$$

$$b = .77 \div 100$$

Tuhia kia rima anō hei tiritiri ki te rōpū.

Hei āwhina i te kaiako

Kia mōhio ki ngā ākonga e whakamahi ana i ngā pātahitanga i roto i ā rātou rongoā hei whakamārama me te whakatika

Tūmanako kia tohu ngā ākonga mā te whakamahi i tētahi tikanga nahanaha o te hopu i ō rātou whakaaro hei ōwehenga

Wā toha

Tīpakohia ngā ākonga hei tiritiri e āhei ana ki te whakamārama me te whakatika i ō rātou whakaaro mā te whakamahi i ngā huarahi hei whakaatu i ō rātou whakaaro.

Hono

Tiria ērā i hangaia e ngā ākonga e whakamātau ana he aha rātou e mahi ai i a rātou. Arotahi i te whakaaro o te ākonga ki te whakamahi i te māramatanga whakarea o te uara wāhi

Whaingā ako Ka ako ngā mokopuna ki te:

Whakaaturia te whakaaro mā te whakamahi i ngā momo tuhipoka rerekē, tae atu ki ngā tohu me ngā kupu.

Whakamahia te māramatanga whakarea o te uara wāhi hei whakaoti i ngā raruraru whakarea me te wehenga ki ngā tau ā-ira.

Tohu whakaaro hei whakamārama me te whakatautika i te uara wāhi e pā ana ki ngā tau ā-ira.

Whakaaro Matua o te Ao Pāngarau

Ko te ā-ira tētahi atu ingoa mō tētahi hautanga, ā, ka taea te pāhono ki te pūwāhi ōrite i te raina tau.

Ko te ōrau tētahi atu huarahi ki te tuhi i tētahi ā-ira e whakataurite ana i tētahi wāhanga ki tētahi katoa e 100 ana te katoa, ā, ka taea te pāhono ki te pūwāhi ōrite i te raina tau.

E pā ana te ōrau ki te rahi o te katoa.

Ko te ōrau he momo ōwehenga motuhake e whakaritea ai tētahi wāhanga ki te katoa, ā, ko te katoa ko te 100.

Ka taea te pāhono i ngā whakamāramatanga rerekē o te ao tūturu ki te hua o te tau oti me te hautanga (ā-ira), te hautanga (ā-ira) me te tau katoa, me te hautanga me te hautanga (ā-ira me te ā-ira).

Ka taea te pāhono i ngā whakamāramatanga rerekē o te ao tūturu ki ngā tatauranga whakawehenga e pā ana ki ngā hautanga (ā-ira).

He ōrite ngā pānga o ngā mahi mō te tāpiri me te tangohanga ki ngā hautanga me ngā ā-ira ki ērā me ngā tau oti.

Ka hurihia te wehenga me te whakawehenga ā-ira ki tētahi tatauranga ōrite me te whakawehenga tau katoa mā te whakarea i te whakawehenga me te moni hua ki te mana tika o te tekau.

Ko te ōwehenga he whakataurite whakarea o ngā rahinga; He rerekē ngā momo whakataurite ka taea te whakaatu hei ōwehenga.

Ka hoatu e ngā ōwehenga ngā rahi pātahi o ngā rahinga e whakatauritea ana, ehara i te mea ko ngā rahi tūturu.

Ka taea te whakapuaki i ngā ōwehenga hei wae mā te kimi i tētahi ōwehenga ōrite ki te wā kotahi te kupu tuarua.

Rapanga Motuhake

Ka haere te ira ki hea? I mua i tō tātai i tētahi whakautu, hoatu ki roto i te ā-ira me te tuhi i tētahi whakamārama he aha koe i hoatu ai ki te wāhi e noho ana.

0.33 x 6.3

33 x 0.63

3.3 x 63

0.33 x 0.63

Ināianei tirohia ō whakautu mā te tātaianga. Mēnā he rerekētanga, tuhia tō whakaaro.

Ngā tini mata o te Marautanga

Te Hanga o ngā Tau 7/8

Tautohu, te pānui, te tuhi, te whakatairite me te raupapa tauoti ki ngā pū o te 10:
h.t.; $10,000 = 10^4$

Tautohu, te pānui, te tuhi, te whakatairite me te raupapa tauoti me ngā tau-a-ira ki ngā pū o te 10:
h.t., $0.01 = 1 \div 100 = 10^{-2}$

Ngā Paheko Tau 7

Whakaāwhiwhi i ngā tau-ā-ira ki te hautekau, haurau, tauoti rānei e pātata ana

Whakarea tauoti.

Nga Tau Whakatau Tau 7/8

Tautohu, te pānui, te tuhi, te whakaahua hautanga, tau-a-ira (kia 3 ngā mati ā-ira) me ngā ōrau.

Tautohu, te pānui, te tuhi, te whakaahua hautanga, tau-a-ira me ngā ōrau.

Whakatairite, te raupapa me te huri i ngā hautau, tau-a-ira (kia 3 ngā mati ā-ira) me ngā ōrau.

Whakatairite, te raupapa me te huri i ngā hautau, tau-a-ira me ngā ōrau.

Kimi i te rahinga mena e mōhio ana ki te hautanga māmā, te tau ā-ira rānei o te rahinga:

h.t., 25% o te rahinga, ko te \$100, nō reira, he aha te rahinga?

Kimi i te rahinga mena e mōhio ana ki te hautanga, te tau ā-ira rānei o te rahinga:
h.t., 75% o te rahinga, ko te \$45, nō reira, he aha te rahinga?

Matau Ahumoni Tau 7/8

Tātai utu me te wāwāhinga moni ahakoa te rahinga o te moni.

Tātai i te whakahekenga ōrau mō ngā rahinga tāra:
h.t., te 35% o te \$180?

Waihanga me te whakatairite mahere ahumoni ā-wiki, ā-marama, ā-tau:

h.t., te penapena pūtea, ngā mahere utu waea pūkoro, ngā mahere pūtea me ngā hoko harangote.

Tātai whakahekenga ōrau.

Mā te kaiako

Ngā Rongoā me ngā paku hapa

Ngā tini mata o te Reo Pāngarau

Ōrau, ōrautanga, katoa, hautanga, tau hautanga, tau ā-ira, tau hautau, ōrite,



Rapanga 12

Whakakapia te pū ki tētahi tau

$$8 \div .1 = p$$

$$8.4 \div .1 = y$$

$$.45 \div .1 = h$$

$$j = 8.2 \div .2$$

$$t = 8.45 \div 2.2$$

$$8.04 \div 2.2 = w$$

Ka taea e koe te tuhi i ētahi mā te whakamahi i te whakarea hei tiri ki te rōpū?

Hei āwhina i te kaiako

Kia mōhio ki ngā ākonga e whakamahi ana i ngā pātahitanga i roto i ā rātou rongoā hei whakamārama me te whakatika

Tūmanako kia tohu ngā ākonga mā te whakamahi i tētahi tikanga nahanaha o te hopu i ō rātou whakaaro hei ōwehenga

Wā toha

Tīpakohia ngā ākonga hei tiritiri e āhei ana ki te whakamārama me te whakatika i ō rātou whakaaro mā te whakamahi i ngā huarahi hei whakaatu i ō rātou whakaaro.

Hono

Tiria ērā i hangaia e ngā ākonga e whakamātau ana he aha rātou e mahi ai

Whainganga ako Ka ako ngā mokopuna ki te:

Whakaaturia te whakaaro mā te whakamahi i ngā momo tuhipoka rerekē, tae atu ki ngā tohu me ngā kupu.

Whakamahia te māramatanga whakarea o te uara wāhi hei whakaoti i ngā raruraru whakarea me te wehenga ki ngā tau ā-ira.

Tohu whakaaro hei whakamārama me te whakatautika i te uara wāhi e pā ana ki ngā tau ā-ira.

Whakaaro Matua o te Ao Pāngarau

Ko te ā-ira tētahi atu ingoa mō tētahi hautanga, ā, ka taea te pāhono ki te pūwāhi ōrite i te raina tau.

Ko te ōrau tētahi atu huarahi ki te tuhi i tētahi ā-ira e whakataurite ana i tētahi wāhanga ki tētahi katoa e 100 ana te katoa, ā, ka taea te pāhono ki te pūwāhi ōrite i te raina tau.

E pā ana te ōrau ki te rahi o te katoa.

Ko te ōrau he momo ōwehenga motuhake e whakaritea ai tētahi wāhanga ki te katoa, ā, ko te katoa ko te 100.

Ka taea te pāhono i ngā whakamāramatanga rerekē o te ao tūturu ki te hua o te tau oti me te hautanga (ā-ira), te hautanga (ā-ira) me te tau katoa, me te hautanga me te hautanga (ā-ira me te ā-ira).

Ka taea te pāhono i ngā whakamāramatanga rerekē o te ao tūturu ki ngā tatauranga whakawehenga e pā ana ki ngā hautanga (ā-ira).

He ōrite ngā pānga o ngā mahi mō te tāpiri me te tangohanga ki ngā hautanga me ngā ā-ira ki ērā me ngā tau oti.

Ka hurihia te wehenga me te whakawehenga ā-ira ki tētahi tatauranga ōrite me te whakawehenga tau katoa mā te whakarea i te whakawehenga me te moni hua ki te mana tika o te tekau.

Ko te ōwehenga he whakataurite whakarea o ngā rahinga; He rerekē ngā momo whakataurite ka taea te whakaatu hei ōwehenga.

Ka hoatu e ngā ōwehenga ngā rahi pātahi o ngā rahinga e whakatauritea ana, ehara i te mea ko ngā rahi tūturu.

Ka taea te whakapuaki i ngā ōwehenga hei wae mā te kimi i tētahi ōwehenga ōrite ki te wā kotahi te kupu tuarua.

Rapanga Motuhake

Tīpakohia tētahi o ngā tūmahi aromatawai e whai ake nei (āpitihia ki te mutunga o te tuhinga) hei ngohe takitahi:

Aromatawai 1: Hautau/Ōwhenga, Ōwhenga me Ngā-ā-Ira

Aromatawai 2: Hautau/Ōwhenga, Ōwhenga me Ngā-ā-Ira.

Ngā tini mata o te Marautanga

Te Hanga o ngā Tau 7/8

Tautohu, te pānui, te tuhi, te whakatairite me te raupapa tauoti ki ngā pū o te 10:
 $ht; 10,000 = 10^4$

Tautohu, te pānui, te tuhi, te whakatairite me te raupapa tauoti me ngā tau-a-ira ki ngā pū o te 10:
 $h.t., 0.01 = 1-100 = 10^{-2}$

Ngā Paheko Tau 7

Whakaāwhiwhi i ngā tau-ā-ira ki te hautekau, haurau, tauoti rānei e pātata ana

Whakarea tauoti.

Nga Tau Whakatau Tau 7/8

Tautohu, te pānui, te tuhi, te whakaahua hautanga, tau-a-ira (kia 3 ngā mati ā-ira) me ngā ōrau.

Tautohu, te pānui, te tuhi, te whakaahua hautanga, tau-a-ira me ngā ōrau.

Whakatairite, te raupapa me te huri i ngā hautau, tau-a-ira (kia 3 ngā mati ā-ira) me ngā ōrau.

Whakatairite, te raupapa me te huri i ngā hautau, tau-a-ira me ngā ōrau.

Kimi i te rahinga mena e mōhio ana ki te hautanga māmā, te tau ā-ira rānei o te rahinga:

$h.t., 25\%$ o te rahinga, ko te \$100, nō reira, he aha te rahinga?

Kimi i te rahinga mena e mōhio ana ki te hautanga, te tau ā-ira rānei o te rahinga:
 $h.t., 75\%$ o te rahinga, ko te \$45, nō reira, he aha te rahinga?

Matau Ahumoni Tau 7/8

Tātai utu me te wāwāhinga moni ahakoa te rahinga o te moni.

Tātai i te whakahekenga ōrau mō ngā rahinga tāra:
 $h.t.,$ te 35% o te \$180?

Waihanga me te whakatairite mahere ahumoni ā-wiki, ā-marama, ā-tau:

$h.t.,$ te penapena pūtea, ngā mahere utu waea pūkoru, ngā mahere pūtea me ngā hoko harangote.

Tātai whakahekenga ōrau.

Mā te kaiako

Ngā Rongoā me ngā paku hapa

Ngā tini mata o te Reo Pāngarau

*Ōrau, ōrautanga, katoa,
hautanga, tau hautanga,
tau ā-ira, tau hautau, ōrite,*



Aromatawai 1: Hautou/Ōwhenga, Ōwhenga me Ngā-ā-Ira

Hoatu kia 12 ngā tauira o ngā tau ā-ira rerekē. Whakaraupapatia mai i te iti rawa ki te nui rawa. Whakamātauria kei roto i te raupapa tika mā te whakamahi i ngā whakaaturanga rerekē e toru.

Aromatawai 2: Hautou/Ōwhenga, Ōwhenga me Ngā-ā-Ira

Tuhia ētahi raruraru kupu mō tētahi hoa e pā ana ki tētahi o ngā mahi (tāpiritanga, tangohanga, whakareatanga, wehenga) mā te whakamahi i ngā hautau, ngā ā-ira, ngā ōrau rānei. Whakaaturia me pēhea e whakatika ai koe i ngā raru.

Aromatawai 3: Ngā hautanga, ngā ā-ira, ngā ōrautanga

Tuhia ētahi raruraru kupu mō tētahi hoa e pā ana ki tētahi o ngā mahi (tāpiritanga, tangohanga, whakareatanga, wehenga) mā te whakamahi i ngā hautau, ngā ā-ira, ngā ōrau rānei.

Whakaaturia me pēhea e whakatika ai koe i ngā raru.