

Hei Tautoko i te Marautanga Pāngarau

## Te Poutama Tau

Pukapuka Tuawhā

## Te Whakaako Mātauranga Tau

- 1 2 3 4 5 6 7 8



## Hei Whakamihi

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

Ko ngā kōrero o roto i tēnei pukapuka i pūtakea mai i te pukapuka nei *Book 4, Teaching Number Knowledge* i whakaputaina e Te Pou Taki Kōrero. Otirā he mea whakahou i runga i ngā whakahoki kōrero mai a te hunga e mahi mai ana i ngā kura reo Māori puta noa i te motu.

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



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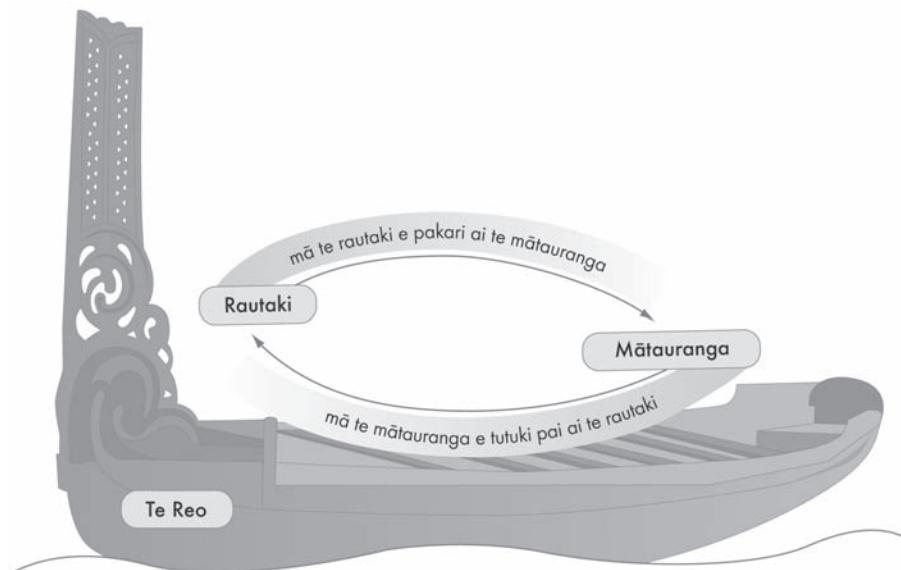
\*Kei te pae ipurangi o [www.nzmaths.co.nz](http://www.nzmaths.co.nz) ēnei rauemi tārua hei tiki atu mā te pouako ina hiahiatia.



# Ngā Kōrero Whakataki

## Te Whakaako Mātauranga Tau

Ko te Mātauranga Tau tētahi wāhanga o te Mahere Tau\*, e haere kōtuitui ana me ngā Rautaki Tau, te Reo Matatini anō hoki. Mēnā e pakari ana te mātauranga tau o te tamaiti, he māmā ake tana ako, tana whakamahi rautaki tau hei whakaoti i ngā momo paheko.



Kua wehea ngā ngohe whakaako o tēnei pukapuka ki ngā wehenga e rima o roto i te Mahere Tau, arā:

Wāhanga 1: **Te Raupapa Tau** (te tatau whakamua me te tatau whakamuri)

Wāhanga 2: **Te Whakaingoa Tohutau**

Wāhanga 3: **Ngā Tau Hautanga**

Wāhanga 4: **Te Uara Tū me te Whakarōpū**

Wāhanga 5: **Ngā Meka Matua**

Ehara i te mea e noho wehe kē ana ēnei wehenga e rima o te Mahere Tau, engari e whai pānga ana tētahi ki tētahi. Hei tauira, kei roto i te Wāhanga 1: Te Raupapa Tau ētahi ngohe e hāngai ana ki te Wāhanga 3: Ngā Tau Hautanga.

E pai ana te whakamahi i ēnei ngohe ki te whakaako i te katoa o te akomanga, hei whakapakari i ngā āhuatanga e ngoikore ana te nuinga o ngā ākonga, hei mahi whakamahana rānei i te tīmatanga o te akoranga pāngarau. E pai ana hoki mā te ākonga takitahi, mā te rōpū ākonga rānei. Katoa ngā ngohe i tēnei pukapuka hei tauira hei whakaaroaro mā te pouako, hei whakahāngai māna ki āna ake ākonga.

Mō ia ngohe, e whakaaturia ana te kaupae o te Mahere Tau me te taumata o ngā Whanaketanga Pāngarau e hāngai ana. Ka taea te nuinga o ngā ngohe te whakahāngai ki ngā kaupae me ngā whanaketanga maha. Arā, kia māmā ngā tau mō ngā kaupae hahaka, kia uua ake ngā tau mō ngā kaupae teitei.

E tutuki ai ētahi o ngā ngohe, me whakamahi ngā Rauemi Tārua e hāngai ana, kei te Wāhanga 6 o tēnei pukapuka. Whakaahuangia ēnei rauemi tārua hei whakamahi mā ngā ākonga, tikina atu rānei i te pae ipurangi o [www.nzmaths.co.nz](http://www.nzmaths.co.nz).

\*Tirohia: *Tē Poutama Tau, Pukapuka Tuatahi. Tē Mahere Tau*. Papaioea: He Kupenga Hao i te Reo (2011).

Ka haere tahi te ako i te mātauranga tau me ngā rautaki whakaoti paheko tau. Me mōhio te ākonga ki ētahi o ngā āhuatanga matua o te mātauranga tau, e tutuki ai tana ako i ngā rautaki tau. Kei roto i te Pukapuka Tuatoru ēnei āhuatanga matua e rārangi mai ana i te wāhangā whakamahere mō ia kaupae rautaki (Wāhanga Tuarima). Ko te upoko kōrero ko: ‘Te Mātauranga Tau kua Mau kē i te Ākonga’.

E tika ana kia whakapikia te mātauranga tau o te ākonga i te wā e ākona ana ngā rautaki tau. Kei roto anō i te Pukapuka Tuatoru (Wāhanga Tuarima) ēnei āhuatanga o te mātauranga tau me āta whakapiki i te wā e ākona ana ngā rautaki. Ko te upoko kōrero, ko: ‘Te Mātauranga Tau e Whakaakona ana’.

He tino hirahira ētahi o ngā wehenga mātauranga tau e whanake ai te tamaiti me tana āhei ki te whakatutuki rautaki tau. Koia nei te mātauranga tūāpapa, e pakari ai te tamaiti ā tōna wā – ko tana mōhio ki te pūnaha uara tū hei tauira.

He whānui te mātauranga e pā ana ki te tatau. Hei tauira, ko te tatau māmā i ngā tauoti, whakamua, whakamuri hoki. Ko te tatau māwhitiwhiti, ko te āta kite anō i ngā tauira i roto i ngā taupū o te tekau, i ngā tau ā-ira, i ngā hautau anō hoki.

He tino hirahira ngā meka matua. Mā te whakamahi rautaki e kite ai te ākonga i ngā meka matua, ā, mā konei e tino mau ai ki te pūmahara o te tamaiti. Ina mau ki te pūmahara, ka wātea hei whakamahi mā te tamaiti i roto i āna rautaki tau. He whānui tonu ngā meka matua hei pupuri mā te tamaiti ki tana pūmahara – ko ngā meka tāpiri/tango, ko ngā meka whakarea/whakawehē, ko ngā tau rearua, ko ngā huringa hautau hei ūrāu, hei hautanga ā-ira, me ētahi atu.



# Wāhanga 1

## Te Raupapa Tau



**Kia mōhiotia ai:** Kei te Wāhanga 3 ētahi atu ngohe e hāngai ana ki te raupapa i ngā tau hautanga. Kei te pouaka rauemi *He Pūtahi Pāngarau* ētahi atu ngohe e hāngai ana ki te whakaako i te Raupapa Tau mō ngā Kaupae 0 ki te 4.

## Tatauria

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau ki tatau whakamua, whakamuri hoki, ki te tatau mawhiti-2, mawhiti-5, mawhiti-10.

### Rauemi

- He paparau hurahura
- He anga pireppire
- Ngaku Tau Hurahura (Rauemi Tārua 4-2)

### Hei Mahi 1

Ngā tohutohu	He tauira kōrero mā te pouako
<p>Aratakina ngā ākonga kia pakipaki i ō rātou ringaringa i a rātou e tatau ā-tahi ana. Huraina ngā tau i te paparau i te wā e tatauria ana, kia kitea ai ngā tohutau.</p> <p>Tonoa ngā ākonga kia tautuhi i ētahi o ngā tau kua oti kē te tatau i te paparau.</p>	<p>Tatau whakamua. Tīmata i te 1. Pakia ō tātou ringaringa i a tātou e tatau ana. Titiro ki ngā tau e huraina ana i te paparau.</p> <p>Kia tatau whakamuri ināianei. Tīmata i te waru, ka heke atu ai ki te tahi.</p> <p>E Hera, tohua mai te rima. Tangiwai, ko tēhea te tohu mō te whitu?</p>
<p>Kia pērā anō te mahi, engari me whakamahi te anga pireppire, te ngaku tau hurahura rānei (Rauemi Tārua 4-2) hei taki i ngā tau.</p>	

### Hei Mahi 2

Ngā tohutohu	He tauira kōrero mā te pouako																																																		
<p>Aratakina ngā ākonga kia papaki i ō rātou turi i a rātou e tatau ā-hinengaro ana i ngā taukehe. Ka papaki i ō rātou ringaringa me te kōrero ā-waha i ngā taurua.</p> <p>Huraina ngā taurua i te paparau i a rātou e tatau ana i ngā taurua.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr> <tr><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td></tr> <tr><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td></tr> <tr><td>31</td><td>32</td><td>33</td><td>34</td><td>35</td><td>36</td><td>37</td><td>38</td><td>39</td><td>40</td></tr> <tr><td>...</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	...										<p>Pakia ō koutou turi, kātahi ko ō koutou ringaringa ... turi, ringaringa, turi, ringaringa.</p> <p>Me tīmata ki te tatau. Tahi ki ngā turi, rua ki ngā ringaringa, toru turi, whā ringaringa.</p> <p>Kōrero ā-waha mai i ngā tau i a koutou e papaki ringaringa ana. Kōrero ā-hinengaro i a koutou e papaki turi ana.</p> <p>Kia ngū te tatau i ngā taukehe, kia hamumu mai te tatau i ngā taurua.</p> <p>Titiro ki ngā tau e huraina ana i te paparau.</p>
1	2	3	4	5	6	7	8	9	10																																										
11	12	13	14	15	16	17	18	19	20																																										
21	22	23	24	25	26	27	28	29	30																																										
31	32	33	34	35	36	37	38	39	40																																										
...																																																			

Kia pērā anō mō te tatau mawhiti-5 me te tatau mawhiti-10.

Whakamahia te anga pirepire. Nukua kia 2 ngā pirepire i a rātou e tatau mawhiti-2 ana. Nukuhia kia 5 ngā pirepire i a rātou e tatau mawhiti-5 ana.

**Hei whakawhānui**

1. Kia pērā anō mō te tatau mawhiti-3 me te tatau mawhiti-4.
2. Tonoa ngā ākonga kia matapae mēnā ka whai wāhi mai tētahi tau ki ngā tau e tatauria māwhitiwhiti ana. Hei tauira:  
Ki tōu whakaaro, ka tatauria te tau 335 i a tātou e tatau mawhiti-5 ana? He aha ai?  
Hei tauira anō:  
He aha te tau nama tekau ka puta i a tātou e tatau mawhiti-5 ana?

## Tatau Māwhitiwhiti i te Rārangi Tau

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau ki te tatau mawhiti-2, mawhiti-5, mawhiti-10.

### Rauemi

- Rārangi Tau Nui (Rauemi Tārua 4-8)
- Rārangi Tau ā-Ira (Rauemi Tārua 4-30)

Ngā tohutohu	He tauira kōrero mā te pouako
<p>Whakamaua he mātiti ki te rārangi tau (<b>Rauemi Tārua 4-8</b>) hei whakaatu i ngā taurea o te rua, ka tono ai i ngā ākonga kia tatau mawhiti-2.</p> <p>Aratakina ngā ākonga ki ngā momo mahi e mau i a rātou te takinga mai o te tatau mawhiti-2.</p> <p>Kia taunga ngā ākonga ki te tatau mawhiti-2, tangohia ngā mātiti. Kātahi ka waiho te rārangi tau ki rahaki.</p> <p>Kia pērā anō mō te tatau mawhiti-5, mawhiti-10.</p>	<p>Titiro ki te rārangi tau. Kua whakamaua he mātiti ki ngā taurua. Tatauria mai. 2, 4, 6, 8 ...</p> <p>Tatau mawhiti-2 whakamuri. Tīmata i te 14.</p> <p>He aha te tau whakamutunga kua whakamaua atu he mātiti?</p> <p>Ko te 14.</p> <p>Haere tonu te tatau mawhiti-2, atu i te 14. He aha ngā tau ka whaiwhai ake?</p> <p>Ko te 16, 18, 20 ...</p> <p>Ki tōu whakaaro, ka tauria te 31?</p> <p>Kāo, nā te mea ehara i te taurua. He tahi te mati whakamutunga.</p>

### Hei whakawhānui 1

1. Whakamaua he mātiti whero ki ngā taurea o te 2, he mātiti kōwhai ki ngā taurea o te 3. E rua ngā mātiti ka whakamaua atu ki ētahi tau (6, 12, 18 ...). Whakamāramahia atu ko ēnei ngā taurea pātahi o te 2 me te 3. Tonoa ngā ākonga kia whakaroa i te raupapa mai o ngā taurea pātahi o te 2 me te 3.
2. Kia pērā anō te mahi mō ētahi atu takirua tau, pērā i te 2 me te 5, te 3 me te 4 ...

### Hei whakawhānui 2

Kia pērā anō te tatau māwhitiwhiti i te rārangi tau ā-ira (**Rauemi Tārua 4-30**):

1. Ka tatau mawhiti-ira rua (0.2): 0.2, 0.4, 0.6, 0.8 ...
2. Ka tatau mawhiti-ira rima (0.5): 0.5, 1.0, 1.5, 2.0 ...
3. Ka tatau mawhiti-ira kore toru (0.03): 0.03, 0.06, 0.09, 0.12, 0.15 ...

# Ararā!

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a

E whakapakari ana ahau i taku mōhio ki te tatau whakamua, whakamuri, māwhitiwhiti hoki.

## Te kēmu

Whakatūria ngā ākonga hei porowhita. Ka whakatauria ko te rima pea te ‘tau ararā’. Ka tīmata tētahi ākonga ki te tatau (mā te pouako anō e tohu te tau tīmata), ā, ka whaiwhai whakatekaraka ngā ākonga, tētahi i tētahi. Kia tae atu ki tētahi taurea o te rima, ka kōrerohia te kupu ‘ararā’, ā, ka noho taua ākonga ki raro. Ka haere tonu te kēmu kia kotahi rā anō te ākonga e tū tonu ana.

## Hei whakawhānui 1

Kia rua ngā tau i te wā kotahi. Arā pea ka ‘ararā’ i ngā taurea o te 3, ka ‘ararī’ i ngā taurea o te 5. Ka pēnei te haere o te tatau: 1, 2, ararā, 4, ararī, ararā, 7, 8, ararā, ararī, 11, ararā, 13, 14, ararā-ararī ...

## Hei whakawhānui 2

Tatau māwhitiwhiti. Hei tauira, ka tatau mawhiti-4 mai i te 3, me te ‘ararā’ i ngā taurea o te 5: 3, 7, 11, ararā, 19, 23, 27, 31, ararā, 39 ...

## Hei whakawhānui 3

Tatau whakamuri. Hei tauira, ko te tatau mawhiti-3 whakamuri mai i te 100, me te ‘ararā’ i ngā taurea o te 5: 100, 97, 94, 91, 88, ararā, 82, 79 ...

## Hei whakawhānui 4

Kia uua ake te tatau māwhitiwhiti. Hei tauira:

1. Tatau mawhiti-100, ka ‘ararā’ i ngā taurea o te 300.
2. Tatau mawhiti-25, ka ‘ararā’ i ngā taurea o te 100.
3. Tatau mawhiti-0.2, ka ‘ararā’ i ngā taurea o te 0.6. Hei tauira: 0.2, 0.4, ararā, 0.8, 1.0, ararā, 1.4 ...
4. Tatau mawhiti-hauwhā, ka ‘ararā’ i ngā taurea o te 1. Hei tauira:  $\frac{1}{4}$ ,  $\frac{2}{4}$ ,  $\frac{3}{4}$ , ararā,  $\frac{5}{4}$ ,  $\frac{6}{4}$ , ararā,  $\frac{9}{4}$  ...

## Raupapahia ngā Kāri

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau ki te raupapa tauoti, hautau, tau ā-ira hoki.

### Rauemi

- He pūkei kāri (tangohia ngā kāri whai kanohi, arā ngā tiaki, ngā kuīni me ngā kīngi)

### Te kēmu

Kia 3, 4, 5 rānei ngā ākonga ki ia rōpū. Whakatakotoria ngā tahi (ngā hai) e whā ki te tēpu, mata ki runga. Hoatu kia rima ngā kāri ki ia ākonga. Ka tīmata tētahi o ngā ākonga ki te whakatakoto i tētahi rua ki runga i tētahi o ngā tahi. Ka whai tētahi ākonga i tētahi ki te whakatakoto i tētahi kāri, kātahi ka tango anō i tētahi kāri mai i te pūkei. Ko te tikanga, kia raupapa mai ngā putunga kāri e whā, mai i te 1 ki te 10. Ko te ākonga ka whakatakoto i te 10, māna e tango taua putunga kāri, ka waiho ai ki rahaki, ā, he māka tana whiwhinga. Kia pau katoa ngā kāri, ka mutu te kēmu.

### Hei whakawhānui

Hangaia ētahi atu pūkei kāri, he rerekē ngā tau. Hei tauira:

- Ko ngā tau mai i te 10 ki te 20.
- Ko ngā tau mai i te 50 i te 60.
- Ko ngā hautau ā-ira mai i te 0.1 ki te 1.0 (ia 0.1).
- Ko ngā hautau mai i te  $\frac{1}{4}$  ki te  $2\frac{1}{4}$  (ia hauwhā).
- Ko ngā tau mai i te 2.31 ki te 3.3 (ia 0.01).

## Kāri Pere

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau ki te tautuhi, ki te whakaraupapa tauoti, tau ā-ira hoki.

### Rauemi

- Kāri Pere (Rauemi Tārua 4-14)
- Kāri Pere Hautanga ā-Ira (Rauemi Tārua 7-2)

### Hei Mahi 1

Ngā tohutohu	He tauira kōrero mā te pouako														
<p>Hoatu tētahi huinga kāri pere (<b>Rauemi Tārua 4-14</b>) ki ia ākonga. Kia hāngai tonu te maha o ngā wāhi uara tū ki te kaupae o te ākonga.</p> <p>Whakamāramatia te tikanga o te tau roha me te tuhituhi i te tau roha.</p> <p>Tonoa mā ngā ākonga e hanga ētahi tau ki ngā kāri pere, me te tuhituhi anō i te tau roha e hāngai ana.</p>	<p>Anei te tau 462, kua hangaia ki ngā kāri pere.</p> <p>4   6   2 ▶</p> <p>E noho tahi ana ngā kāri pere, tētahi ki runga i tētahi. E tohu ana te 2 i te aha? Ko te 2 noa iho. E 2 ngā tahi.</p> <p>E tohu ana te 6 i te aha? I te 60. E 6 ngā tekau.</p> <p>E tohu ana te 4 i te aha? I te 400. E 4 ngā rau.</p> <p>Kia rohaina ngā kāri, ka kitea te tikanga o ia mati. Ko te 2 noa iho. Ko te 60, ko te 400.</p> <p>4   0   0 ▶ 6   0 ▶ 2 ▶</p> <p>Kia pēnei te tuhi i te tau roha: <math>400 + 60 + 2 = 462</math>.</p>														
<p>Kia pērā anō te arataki i ngā ākonga kia tuhi i ngā tau roha. Hei tauira:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">62</td> <td style="width: 25%;">709</td> <td style="width: 25%;">324</td> <td style="width: 25%;">3,608</td> </tr> <tr> <td>1.2</td> <td>2.56</td> <td>14.59</td> <td>1.056</td> </tr> </table>	62	709	324	3,608	1.2	2.56	14.59	1.056	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">7,004</td> <td style="width: 25%;">8,019</td> <td style="width: 25%;">...</td> </tr> <tr> <td>17.004</td> <td>206.049</td> <td>...</td> </tr> </table>	7,004	8,019	...	17.004	206.049	...
62	709	324	3,608												
1.2	2.56	14.59	1.056												
7,004	8,019	...													
17.004	206.049	...													

### Te kēmu

Horahia ngā kāri pere tauoti (tau ā-ira rānei) ki runga i te papa, ko ngā mata ki raro. Kei a koe anō te whiriwhiri mō ngā kāri ka whakamahia – ākene pea ka waiho ki rahaki ngā mano (ngā haumano rānei).

Ka whai tētahi ākonga i tētahi ki te tango i tētahi kāri mō ia uara tū. Mā ia ākonga e whakamahi āna kāri ki te hanga i tētahi tau, ka whakaaturia kia kitea e te katoa. Ka āta whiriwhiria e te rōpū ko tēhea te tau nui rawa atu. He māka ka whakawhiwhia ki tēnā ākonga.

Kātahi ka tangohia atu te kāri o te uara tū nui rawa atu mō ngā kāri tauoti (ākene pea ko te kāri rau), te kāri o te uara tū iti rawa atu rānei mō ngā tau ā-ira (ākene pea ko te kāri haurau). Ka whiriwhiria anō te tau nui rawa atu, ā, he māka anō ka riro i tēnā ākonga.

Kia pērā tonu te haere o te kēmu kia pau katoa ngā kāri pere. Ko te ākonga kei a ia te maha rawa atu o ngā māka, ko ia te toa.

## Te Tau ki Mua, te Tau ki Muri

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau i te tau he 1, he 10, he 100, he 0.1, he 0.01, he 0.001 rānei te nui ake, te iti ake rānei i tētahi tau.

### Rauemi

- He kāri tau (kia hāngai ngā tau ki te kaupae o te ākonga)
- He anga pirepire
- Paparau (Rauemi Tārua 4-4)
- Rārangi Tau ā-Ira (Rauemi Tārua 4-30)

### Hei Mahi 1

Ngā tohutohu	He tauira kōrero mā te pouako
Raua atu ngā kāri tau ki tētahi ipu. Tonoa tētahi ākonga kia tango i tētahi kāri, ka whakaatu ai ki te akomanga. Ko tā te rōpū, he kōrero i te tau kotahi te iti ake, me te tau kotahi te nui ake.	<p>He kāri tau kei roto i te ipu aihikirīmi nei. Hīria, māu tētahi kāri e tango, ka whakaatu mai ai ki te katoa.</p> <p>He aha te tau kotahi te iti ake?</p> <p>He aha te tau kotahi te nui ake?</p>
<p>Tonoa ngā ākonga kia kōrero i te tau he 10 te iti ake, me te tau he 10 te nui ake.</p> <p>Tonoa ngā ākonga kia kōrero i te tau he 0.1 te iti ake, me te tau he 0.1 te nui ake.</p>	

### Hei Mahi 2

Ngā tohutohu	He tauira kōrero mā te pouako
<p>Whakaaturia tētahi tau ki te anga pirepire (hei tauira, nekehia kia 22 ngā pirepire ki te taha). Tonoa ngā ākonga kia kōrero i taua tau.</p> <p>Tangohia (tāpiria rānei) tētahi pirepire, ka tono ai i ngā ākonga ki te kōrero i te tau hou.</p> <p>Whakaaturia te tau tīmatanga, te tau he kotahi te iti ake, me te tau he kotahi te nui ake ki te paparau (<b>Rauemi Tārua 4-4</b>), ki te rārangi tau rānei.</p>	<p>He aha te tau e whakaaturia ana ki te anga pirepire nei? Ko te 22.</p> <p>Āe, e rua ngā tekau me te rua.</p> <p>Māku tētahi pirepire e tango atu. He aha te tau ināianei? Ko te 21.</p> <p>Ina tāpiria tētahi pirepire ki te 22, ka hia ngā pirepire ināianei? Ka 23.</p> <p>Roimata, māu e tohu mai ēnei tau e toru ki te paparau. He aha te tau he kotahi te iti ake i te 22? Ko te 21.</p> <p>He aha te tau he kotahi te nui ake i te 22? Ko te 23.</p>

### **Hei whakawhānui**

Tonoa ngā ākonga kia kōrero i te tau:

- He 2 te iti ake, te nui ake rānei.
- He 10 te iti ake, te nui ake rānei.
- He 100 te iti ake, te nui ake rānei.
- He 0.1 te iti ake, te nui ake rānei.
- He 0.01 te iti ake, te nui ake rānei.
- He 5 te iti ake, te nui ake rānei.
- ...

### **Kia mataara**

Kāore pea ētahi ākonga e mārama ki te tikanga o te uara tū mō ngā tau ā-ira. Hei tauira, ki te titiro a ētahi he iti ake te 0.7 i te 0.67 (nā te mea he nui ake te 67 i te 7). Nō reira he pai tonu te whakatauira i ēnei tau ā-ira ki ngā rauemi, pērā i te paipa uara tū me te rārangi tau-ā-ira (**Rauemi Tārua 4-30**).

## Tātaitai

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau ki te tatau māwhitiwhiti i ngā tauotī me ngā tau ā-ira.

### Rauemi

- He tātaitai
- He paparau hurahura
- Ngaku Tau Hurahura (Rauemi Tārua 4-2)
- Rārangi Tau ā-Ira Wātea (Rauemi Tārua 4-31)

### Hei Mahi 1

Ngā tohutohu	He tauira kōrero mā te pouako																																																												
<p>Tonoa ngā ākonga kia patoa ngā pātuhi  <math>5 + = = =</math> ki te tātaitai, hei whakaputa i ngā taurea o te 5, arā, te tatauranga mawhiti-5.</p> <p>Tonoa ngā ākonga kia whakahua i ngā tau i mua i te patopato i ngā pātuhi.</p> <p>Whakaaturia te raupapa o te tatau mawhiti-5 ki te paparau hurahura, ki te ngaku tau hurahura rānei (<b>Rauemi Tārua 4-2</b>).</p> <p><b>Kia mōhiotia ai:</b>  Mō ētahi tātaitai (pērā i te Casio), kia 2 ngā patopato i te tohu ‘+’ e puta ai te tatau māwhitiwhiti).</p>	<p>Anei ngā pātuhi hei pato māu ki tō tātaitai:  <math>5 + = = =</math></p> <p>He aha ngā tau ka puta ki te mata o te tātaitai?  Ko te 5, te 10, te 15, te 20, te 25, te 30 ...</p> <p>Koia ngā tau mawhiti-5.</p> <p>Whakaputaina ngā tau mawhiti-2. He aha ngā pātuhi hei pato?  Ko te <math>2 + = = = \dots</math></p> <p>Mā koutou e whakaputa ngā tau māwhiti-5, māku e whakaatu ki te paparau hurahura nei:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td></td><td></td><td>5</td><td></td><td></td><td>10</td></tr> <tr><td></td><td></td><td>15</td><td></td><td></td><td>20</td></tr> <tr><td></td><td></td><td>25</td><td></td><td></td><td>30</td></tr> <tr><td></td><td></td><td>35</td><td></td><td></td><td>40</td></tr> <tr><td></td><td></td><td>45</td><td></td><td></td><td>50</td></tr> <tr><td></td><td></td><td>55</td><td></td><td></td><td>60</td></tr> <tr><td></td><td></td><td>65</td><td></td><td></td><td>70</td></tr> <tr><td></td><td></td><td>75</td><td></td><td></td><td>80</td></tr> <tr><td></td><td></td><td>85</td><td></td><td></td><td>90</td></tr> <tr><td></td><td></td><td>95</td><td></td><td></td><td>100</td></tr> </table> <p>He aha ētahi tauira e kitea mai ana?  He tauira whakautu:</p> <ul style="list-style-type: none"> <li>• Ka taka ngā tau mawhiti-5 ki ngā pou e rua anake.</li> <li>• Ko te 5, ko te 0 rānei te mati whakamutunga o ngā tau mawhiti-5 katoa.</li> </ul>			5			10			15			20			25			30			35			40			45			50			55			60			65			70			75			80			85			90			95			100
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## Hei Mahi 2

Ngā tohutohu	He tauira kōrero mā te pouako
Tonoa ngā ākonga kia pato i ngā pātuhi nei ki ā rātou tātaitai: + 4 = = = = ...  Ka uhia te mata o te tātaitai kia kore ai e kitea ngā tau e putaputa mai ana.  Tonoa ngā ākonga kia whakamutua te patopato i te pātuhi '=' ina tae atu ki te 24.	Uhia te mata o tō tātaitai kia kore ai e kitea ngā tau e putaputa mai ana.  Patoa te + 4. Patopatoa te pātuhi ūrite (=), kia tae atu ki te 24. Tirohia te tau i te mata o te tātaitai. Kei te tika koe? I tae atu koe ki te 24? E hia ngā patopato i te tohu ūrite (=) kia tae atu ki te 24? E 6.
Kia pērā anō te mahi mō ētahi atu tau.	

## Hei Mahi 3

Ngā tohutohu	He tauira kōrero mā te pouako
Tonoa ngā ākonga kia pato i ngā pātuhi nei ki ā rātou tātaitai: + 4 = = = = ...  Ka matapae ngā ākonga mēnā ka puta tētahi tau, pērā i te 37, i te raupapa tatauranga mawhiti-4 nei.	Patoa ngā pātuhi nei ki tō tātaitai: + 4 = = = = ...  Ki tōu whakaaro ka puta te 37 ki tēnei tatauranga mawhiti-4? Kāore.  He aha i pēnā ai ū whakaaro? Nā te mea he taurua ngā tau mawhiti-4 katoa.
Kia pērā anō te mahi mō ētahi atu tau.	

## Hei whakawhānui

1. Kia pērā anō te mahi mō ngā tatau māwhitiwhiti nei:  
mawhiti-3, mawhiti-10, mawhiti-4, mawhiti-100, mawhiti-0.1, mawhiti-0.01
2. Tīmatahia te tatau māwhitiwhiti ki ētahi tau rerekē. Hei tauira:  
4 + 5 = = = = ... Ka puta ko te 4, 9, 14, 19, 24 ...  
3.1 + 100 = = = = ... Ka puta ko te 3.1, 103.1, 203.1, 303.1, 403.1 ...
3. Tatau māwhitiwhiti whakamuri. Hei tauira:  
100 - 5 = = = = ... Ka puta ko te 100, 95, 90, 85, 80 ...  
6.2 - 0.1 = = = = ... Ka puta ko te 6.2, 6.1, 6.0, 5.9, 5.8 ...

## Raupapahia

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau ki te raupapa tauoti, hautau, tau ā-ira hoki.

### Rauemi

- Kia rua ngā mataono tau (1-6), kia rua rānei ngā matatekau tau (0-9)
- He pepa

67  
10  
waka ātea

### Te kēmu

Ka whai tētahi ākonga i tētahi ki te pīrori i ngā mataono tau e rua.

Ka whakamahia ngā mati e rua ki te hanga i tētahi tau mati-2, ā, ka tuhia taua tau ki te waka ātea. Hei tauira, mēnā ka puta te 5 me te 3, e taea ana te 53, te 35 rānei.

E whai ana kia tika te raupapa mai o ngā tau i te waka ātea, mai i te iti ki raro ki te nui ki runga. Ki te kore e taea e tētahi ākonga te tuhi tētahi tau ki te waka ātea, ka haere ki te ākonga e whai mai ana.

Ko te ākonga ka tuhi i te tau whakamutunga ki te waka ātea, ko ia te toa.

### Hei whakawhānui

1. Kia 3 ngā mataono tau hei hanga i tētahi tau mati-3. Ka tuhia te 110 ki te wehenga raro o te waka ātea, te 667 ki te wehenga runga.
2. Kia 3 anō ngā mataono tau, engari, ka hangaia he tau ā-ira. Ka tuhia te 1.1 ki te wehenga raro o te waka ātea, te 6.67 ki te wehenga runga.

## Whakaaturia ki te Rārangi Tau

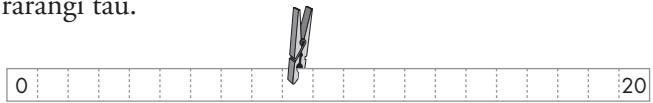
Mahere Tau | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau ki te raupapa tau mati-2.

### Rauemi

- Rārangi Tau Wātea (Rauemi Tārua 4-12)
- Rārangi Tau ā-Ira Wātea (Rauemi Tārua 4-31)

Ngā tohutohu	He tauira kōrero mā te pouako
<p>Whakaaturia tētahi rārangi tau wātea (<b>Rauemi Tārua 4-12</b>), ko te tau tīmatanga me te tau whakamutunga o te rārangi tau anake e kitea mai ana. Ko ērā atu o ngā tau e huna ana ki muri.</p> <p>Mā tētahi ākonga e whakamau tētahi mātiti ki te rārangi tau. Ka tonoa ērā atu o ngā ākonga ki te whiriwhiri i te tau e hāngai ana ki te wāhi i whakamaua ai te mātiti.</p>	<p>Anei tētahi rārangi tau. He aha te tau tīmatanga? Ko te 0.</p> <p>He aha te tau whakamutunga o te rārangi tau? Ko te 20.</p> <p>E Tama, whakamaua atu tētahi mātiti ki tētahi wāhi o te rārangi tau.</p>  <p>He aha te tau e hāngai ana ki te wāhi e noho nei te mātiti? Ko te 9.</p> <p>He aha ai?</p> <p>Nā te mea he paku iti ake i te 10, te haurua o te 20.</p>
<p>Huripokina te rārangi tau kia kitea ai te tika (te pātata, te tawhiti rānei) o te whakautu.</p>	<p>Ina huripokina te rārangi tau nei, ka kitea ūna tau katoa mai i te 0 ki te 20. Pēhea nei te pātata o te mātiti ki te 9?</p>
<p>Mēnā e raru ana ngā ākonga, ka tukuna he paku āwhina. Hei tauira:</p> <p>E tohu ana ahau i te 10, koirā te haurua o te 20. He aha ki tōu whakaaro te tau e hāngai ana ki te mātiti?</p>	<p><b>Hei whakawhānui</b></p> <ol style="list-style-type: none"> <li>1. Kia pērā anō te mahi, engari kia aro ki te tau ā-ira (<b>Rauemi Tārua 4-31</b>).</li> <li>2. Mā ngā ākonga e hanga ā rātou ake rārangi tau huripoki, kia rerekē ngā tau tīmatanga me ngā tau whakamutunga. Hei tauira: <ul style="list-style-type: none"> <li>• ngā tauoti mai i te 40 ki te 60</li> <li>• ngā taurea o te 3 mai i te 0 ki te 30</li> <li>• ngā 0.1 mai i te 4.7 ki te 7.2</li> <li>• ngā hauwhā mai i te <math>2\frac{1}{4}</math> ki te <math>6\frac{1}{2}</math></li> </ul> </li> </ol>

## He Aha te Tau?

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a

E ako ana ahau ki te raupapa tau mati-2.

### Rauemi

- He paparau hurahura
- Rārangi Tau Nui (Rauemi Tārua 4-8)
- Kia 2 ngā mātiti
- Rārangi Tau-ā-Ira (Rauemi Tārua 4-30)

### Te kēmu

Whakamaua tētahi mātiti ki ia pito o te rārangi tau 0–100 (**Rauemi Tārua 4-8**). Mā tētahi ākonga e kōwhiri tētahi tau kei waenganui i te 0 me te 100, ka tuhi huna ai ki te pepa. Ka tuku pātai mai ērā atu o ngā ākonga ki te whiriwhiri i te tau kua tuhia e te ākonga ki te pepa. I muri i ia pātai, ka nukua tētahi o ngā mātiti ki te whakaatu i te wāhi o te rārangi tau kei reira te tau e noho ana. Hei tauira:

Te pātai	Te whakautu me te nuku i te mātiti
He nui ake i te 25?	Āe (me te nuku i te mātiti mai i te 0 ki te 25, hei tohu kei waenganui te tau i te 25 me te 100).
	Kāo (me te nuku i te mātiti mai i te 100 ki te 25, hei tohu kei waenganui te tau i te 0 me te 25).
He iti ake i te 75?	Āe (me te nuku i te mātiti mai i te 100 ki te 75, hei tohu he iti ake te tau i te 75).
	Kāo (me te nuku i te mātiti mai i te 0 ki te 75, hei tohu kei waenganui te tau i te 75 me te 100).

Ka pēnei te haere o te mahi kia kitea mai ai te tau i tuhia e te ākonga.

### Hei whakawhānui 1

- Kia rerekē te tau tīmatanga me te tau whakamutunga o te rārangi tau.
- Whakamahia he rārangi tau ā-ira (**Rauemi Tārua 4-30**).
- Whakamahia he rārangi hautau.

## Hei whakawhānui 2

Tuhia ngā tau ki te papa tuhituhi, kaua e whakaatu ki te rārangi tau. Ko tā te ākonga, he whakaahua ā-hinengaro i te raupapa mai o ngā tau. Hei tauira:

Ngā kōrero	Ngā tuhinga	
Kei waenganui i te 0 me te 5 te tau e whakaaro ana ahau.	0	5
He nui ake i te 2.5? Āe	2.5	5
He iti ake i te 3.6? Āe	2.5	3.6
He nui ake i te 3.0? Kāo	2.5	<u>3.0*</u>

\* I tārarotia te 3.0 nā te mea ka taea tonutia te 3.0.

Kia pēnei tonu te haere o te kēmu kia kitea mai ai te tau e kimihi ana.

## Te Paparau me te Pukamano

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau ki te tatau whakamua, whakamuri hoki mā te tahi, mā te tekau, mā te rau.

### Rauemi

- Paparau (Rauemi Tārua 4-4)
- Te Pukamano (Rauemi Tārua 4-7)
- Arawhata Paparau (Rauemi Tārua 4-35)

### Hei Mahi 1

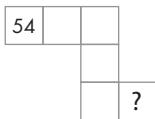
Ngā tohutohu	He tauira kōrero mā te pouako
Tohua ētahi tau, ētahi wāhi wātea rānei i ngā whārangī o te pukamano ( <b>Rauemi Tārua 4-7</b> ). Ko tā ngā ākonga, he kōrero i ngā tau ka tohua e koe.	<p>Kōrerotia mai tēnei tau.</p> <p>He aha tēnei tau?</p> <p>(Mō tētahi wāhi wātea.) He aha te tau e tika ana mō tēnei wāhi?</p> <p>He aha tēnei tau?</p> <p>Ko te 125.</p> <p>He aha te tau e tika ana ki te taha matau?</p> <p>Ko te 126.</p> <p>He aha te tau e rua te itinga ake?</p> <p>Ko te 123.</p>
Whakawhitiwhiti kōrero mō te āhua o te pukamano me te nuku whakatepae, nuku whakatepou, me te nuku ki whārangī kē.	<p>Anei te tau 367. He aha te tau mēnā kotahi te nuku whakatematau?</p> <p>Ko te 368 – kotahi te nui ake.</p> <p>Kotahi te nuku whakatemaūi, he aha te tau?</p> <p>Ko te 366 – kotahi te itinga ake.</p> <p>Kotahi te nuku whakarunga?</p> <p>Ko te 357 – tekau te itinga ake.</p> <p>Kotahi te nuku whakararo?</p> <p>Ko te 377 tērā – tekau te nui ake.</p> <p>Mēnā ka haere ki te whārangī e whai mai ana, he aha te tau?</p> <p>Ko te 467 – kotahi rau te nui ake.</p> <p>He aha te tau i te whārangī i mua?</p> <p>Ko te 267 – kotahi rau te itinga ake.</p>

## Hei Mahi 2

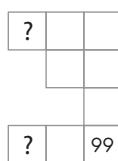
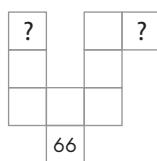
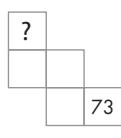
Ngā tohutohu	He tauira kōrero mā te pouako
<p>Whakamāramatia ngā tohu nei, ka hoatu ai i ētahi rapanga hei whiriwhiri mā ngā ākonga:</p> <p>← whakatemauī → whakatematau ↑ whakarunga ↓ whakararo ⇒ whārangi o muri (tāpirihia te 100) ⇐ whārangi o mua (tangohia te 100)</p>	<p>Titiro ki ngā tohu nei, he tohu nekenekē i te paparau. He aha ki ōu whakaaro te tikanga? 25 ↓↓↓←</p> <p>Ko te 25 te tau tīmata. Mai i reira, kia toru ngā hekenga whakararo, kia kotahi te neke whakatemauī. Arā, ka tīmata i te 25, ka tāpiria ētahi tekau e 3, ka 55, tangohia te kotahi, ka 54.</p> <p>Pēhea tēnei? He aha te tikanga o ēnei tohu? 487 ←←↑</p> <p>He tohu ēnei mō te neke i te pukamano. Arā, ka tīmata i te 487, ka hoki whakamuri kia 2 ngā whārangi ki te 287, ka tangohia te tekau, ka 277.</p>

Māu e hoatu ētahi atu raupapatanga tohu hei whiriwhiri mā ngā ākonga, tonoa rānei mā rātou ētahi e tuhi. Hei tauira: 67 ↓↓↓←↑↑←←↓

## Hei Mahi 3

Ngā tohutohu	He tauira kōrero mā te pouako
<p>Hoatu he wehenga arawhata paparau (<b>Rauemi Tārua 4-35</b>), tuhia rānei ki te papa tuhituhi. Tonoa ngā ākonga kia whiriwhiri i ngā tau e tika ana mō roto i ngā wāhi wātea.</p>	<p>Anei tētahi wāhangā o te paparau, engari kua ngaro ētahi o ngā tau. He aha te tau e tika ana mō te wāhi kei reira te tohu pātai?</p> <p>Ko te 77.</p>  <p>He aha ngā whiriwhiringa? Haere whakatematau, 54, 55, 56. Heke whakararo, 66, 76. Haere whakatematau anō, ka 77.</p>

Kia pērā anō ngā mahi mō ētahi atu arawhata paparau, pēnei i ēnei:



## Hei whakawhānui

Tirohia *He Tau Anō te Tau, Taumata 2-3 Tau*, whārangi 1. Kei reira ētahi atu mahi hei āwhina i ngā ākonga ki te whiriwhiri i ngā tauira tau o te paparau.

## He Aho Pirepire

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau ki te raupapa tauoti, tau ā-ira hoki.

### Rauemi

- He aho pirepire (kia 100 ngā pirepire i ngā rōpū o te rima)
- He pepa whakapiri paku

### Hei Mahi 1

Ngā tohutohu	He tauira kōrero mā te pouako
Whakaaturia te aho pirepire ki ngā ākonga. Tohua te 0 me te 100 ki te pepa whakapiri.	Titiro ki te aho pirepire. Kotahi rau ngā pirepire. Ka tohua te 0 me te 100 ki ngā pepa whakapiri nei. Ko te 0 te tīmatanga o te aho, ko te 100 te mutunga.
Tonoa ngā ākonga kia tautuhi i ngā taurea o te 10.	Kei hea te 50? Tohua ki te pepa whakapiri. Koirā te haurua o te aho.
	Kei hea te 90? Tohua ki te pepa whakapiri. Tekau te itinga ake i te 100.
	Kei hea te 10? Tekau te nui ake i te 0.
	Tohua ērā atu o ngā tau ngahuru, arā te 20, te 30, te 40, te 60, te 70 me te 80.

Kia pērā anō te whakaatu i ētahi atu tau i te aho pirepire, pērā i te 75. Ko te tikanga kia kaua ngā ākonga e tatau i ngā pirepire, engari ka whakamahi i ngā rōpū o te rima me te mātauranga e pā ana ki te raupapa o ngā tau. Hei tauira, kei waenganui pū te 75 i te 50 me te 100.

### Hei Mahi 2

He mahi takirua tēnei. Hoatu he aho pirepire ki ia takirua, me ētahi pepa whakapiri e tohu ana i ētahi tau. Ko tā ngā ākonga he whakapiri atu i ngā pepa ki te wāhi e tika ana i te aho. Whakatenatenahia ngā ākonga kia whakawhitiwhiti kōrero i a rātou e mahi ana.

### Hei Mahi 3

Honoa ētahi aho pirepire e 5 hei hanga i te aho mai i te 0 ki te 500. Hoatu he tau hei whakaatu mā ngā ākonga ki te aho. Tonoa rātou kia whakamārama i ngā rautaki ka whakamahia hei whiriwhiri i te wāhi tika mō ia tau.

#### Hei Mahi 4

Kia pērā anō te mahi, engari ka tohua te 0 i te tīmatanga o te aho, ko te 1 i te pito whakamutunga. Ko tā ngā ākonga, he whakaatu i ngā wāhi e tika ana mō ētahi hautau.

Hei tauira:

- Ko te  $\frac{1}{2}$ , te  $\frac{1}{4}$ , te  $\frac{3}{4}$ , te  $\frac{1}{5}$ , te  $\frac{4}{5}$ , te  $\frac{7}{10}$  ...
- Ko te 0.2, te 0.5, te 0.25, te 0.67 ...

#### Hei Mahi 5

Honoa ētahi aho pirepire e 5, hei hanga i te aho mai i te 0 ki te 5. Tonoa ngā ākonga kia whakaatu i te wāhi tika mō ētahi hautau kei waenganui i te 0 me te 5.

Hei tauira:

Ko te  $\frac{9}{4}$ , te  $\frac{13}{10}$ , te  $\frac{24}{5}$ , te 1.5, te 4.67, te 3.01 ...

## Te Tau Nui Rawa Atu

Mahere Tau	0	1	2	3	4	5	6	7	8
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Whanaketanga	1a	1e	2a	2e	3a	3e	4a	4e	5a
--------------	----	----	----	----	----	----	----	----	----

E ako ana ahau ki te raupapa tauoti nui ki te 1,000,000.

### Hei whakamārama

Ko te mea matua hei tohu i te rahi o tētahi tau, tau ā-ira rānei, ko te uara tū o te mati i te taha mauī. Hei tauira, he rahi ake te 100,000 i te 98,888 nā te mea ko te rau mano te uara tū o te 1 i roto i te tau 100,000, ko te tekau mano noa iho te uara tū o te 9 i roto i te tau 98,888.

	Whare Mano			Whare Mātāmua		
	rau	tekau	tahi	rau	tekau	tahi
1	0	0	0	0	0	0
9	8	8	8	8	8	8

### Rauemi

- Moni Tākaro (Rauemi Tārua 4-9)

Ngā tohutohu		He tauira kōrero mā te pouako																																																										
Tuhia te rārangī ingoa nei me ngā pūtea pēke ki te papa tuhituhi.		Titiro ki te rārangī ingoa nei e whakaatu ana i te rahi o te pūtea pēke a tēnā me tēnā. Me pēhea te whiriwhiri nā wai te pūtea nui rawa atu?																																																										
Whakawhitiwhiti kōrero mō te huarahi hei kimi mai i te tau nui rawa atu.		Me āta tirotiro te uara tū o te mati tuatahi o ia tau. He mārama ake mēnā ka tuhia ngā tau ki tētahi whare uara tū:																																																										
<table border="1"> <thead> <tr> <th>Ingoa</th> <th>Pūtea pēke</th> </tr> </thead> <tbody> <tr> <td>Emere</td> <td>\$5,007</td> </tr> <tr> <td>Piripi</td> <td>\$40,801</td> </tr> <tr> <td>Hana</td> <td>\$33,104</td> </tr> <tr> <td>Takimoana</td> <td>\$33,025</td> </tr> <tr> <td>Reihana</td> <td>\$4,111</td> </tr> </tbody> </table>		Ingoa	Pūtea pēke	Emere	\$5,007	Piripi	\$40,801	Hana	\$33,104	Takimoana	\$33,025	Reihana	\$4,111	<table border="1"> <thead> <tr> <th colspan="3">Whare Mano</th> <th colspan="3">Whare Mātāmua</th> </tr><tr> <th>rau</th> <th>tekau</th> <th>tahi</th> <th>rau</th> <th>tekau</th> <th>tahi</th> </tr> </thead> <tbody> <tr> <td></td><td></td><td></td><td>5</td><td>0</td><td>0</td></tr> <tr> <td></td><td></td><td></td><td>4</td><td>0</td><td>8</td></tr> <tr> <td></td><td></td><td></td><td>3</td><td>3</td><td>1</td></tr> <tr> <td></td><td></td><td></td><td>3</td><td>3</td><td>0</td></tr> <tr> <td></td><td></td><td></td><td>4</td><td>1</td><td>1</td></tr> </tbody> </table>					Whare Mano			Whare Mātāmua			rau	tekau	tahi	rau	tekau	tahi				5	0	0				4	0	8				3	3	1				3	3	0				4	1	1
Ingoa	Pūtea pēke																																																											
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			4	0	8																																																							
			3	3	1																																																							
			3	3	0																																																							
			4	1	1																																																							
Mēnā kei te raruraru ngā ākonga, whakamahia te moni tākaro ka hanga ai i ia pūtea.		E toru ngā tau e whai mati ana i te wāhi o ngā tekau mano. Ko te 4 te mati nui rawa atu i te wāhi o ngā tekau mano, nō reira koirā te tau nui rawa atu. Arā, te 40,801.																																																										
Tonoa ngā ākonga kia raupapa i ngā tau mai i te iti ki te rahi.		Raupapahia ngā pūtea pēke mai i te mea iti rawa ki te mea rahi rawa. Whakamāramatia mai.																																																										
		E rua ngā tau, e whā noa iho ō rāua mati, ko te 4,111 te iti rawa o ērā. Ko te 5,007 te tuarua. E rua ngā tau e 33 ngā																																																										

	mano, ko te 33,025 te iti rawa o ērā, ko te tuatoru tērā, ko te 33,104 te tuawhā, ko te 40,801 te pūtea nui rawa atu. Arā: \$4,111 \$5,007 \$33,025 \$33,104 \$40,801
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Kia pērā anō te mahi hei kimi mai i te tau nui rawa atu o ētahi atu huinga tau. Hei tauira:

Huinga tau 1	Huinga tau 2	Huinga tau 3
100,090	7,090	990,090
345,789	105,740	999,000
45,677	456,003	909,099
56,891	60,840	990,999
99,003	99,470	900,999



## Wāhanga 2

# Te Whakaingoa Tohutau



**Kia mōhiotia ai:** Kei te Wāhanga 3 ētahi atu ngohe e hāngai ana ki te whakaingoa i ngā tau hautanga.

## Whāriki Tohutau

Mahere Tau	0	1	2	3	4	5	6	7	8
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Whanaketanga	1a	1e	2a	2e	3a	3e	4a	4e	5a
--------------	----	----	----	----	----	----	----	----	----

E ako ana ahau ki te tautuhi i ngā tau matitahi me ngā tau matirua.

### Rauemi

- Whāriki Tohutau (he whāriki nui me ngā tohutau 0 ki te 9 e marara ana ki runga) (Rauemi Tārua 4-13)
- Kāri Tohutau Nui (Rauemi Tārua 4-3)

### Hei Mahi 1

Ngā tohutohu	He tauira kōrero mā te pouako																
<p>Whakatakotoria te whāriki e whakaatu ana i ngā tohutau 0 ki te 9 (<b>Rauemi Tārua 4-13</b>). Ka noho ngā ākonga ki ngā taha. Tonoa tētahi ākonga ki te peke atu ki te tau ka karangahia e koe.</p> <p>Tonoa ngā ākonga katoa kia tuhi i te tohutau ki te rangi, ki te papa rānei.</p>	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>5</td><td>8</td><td>4</td><td>3</td></tr> <tr> <td>2</td><td>7</td><td>5</td><td>0</td></tr> <tr> <td>0</td><td>1</td><td>4</td><td>6</td></tr> <tr> <td>7</td><td>9</td><td>2</td><td>8</td></tr> </table> <p>E Mara, peke atu ki te whā.</p> <p>E Hine, e tū ki runga i te ono.</p> <p>Tamariki mā, tuhia te ono ki te rangi.</p>	5	8	4	3	2	7	5	0	0	1	4	6	7	9	2	8
5	8	4	3														
2	7	5	0														
0	1	4	6														
7	9	2	8														
<p>Tonoa tētahi ākonga kia whakapā atu ki ētahi tau e toru i te wā kotahi. Arā pea, ko ia waewae ki tētahi tau, ko tētahi ringaringa ki tētahi.</p> <p>He mahi pārekareka kia tonoa ētahi ākonga tokorua, tokotoru rānei kia whai i ngā tohutohu i te wā kotahi.</p>	<p>Moehau, whakapā atu ki te whā, te toru me te whitu.</p>																

### Hei Mahi 2

Ngā tohutohu	He tauira kōrero mā te pouako
<p>Kia pērā anō ki te Hei Mahi 1, engari ka tonoa ngā ākonga kia whakapā atu ki te tau he kotahi te nui ake, te iti ake rānei i te tau ka karangahia e koe. Hei āwhina tēnei ki te ako i te raupapatanga tau.</p>	<p>E Mara, peke atu ki te tau he kotahi te nui ake i te whā.</p> <p>E Tama, tō waewae matau ki te tau he kotahi te iti ake i te toru, tō waewae mauī ki te tau he kotahi te nui ake i te ono.</p>

### Hei Mahi 3

Ngā tohutohu	He tauira kōrero mā te pouako
Whakarārangihia ngā kāri tohutau ( <b>Rauemi Tārua 4-3</b> ). Tonoa ngā ākonga kia peke atu ki ngā tau ka karangahia e koe.	Manahi, peke atu ki te toru, te rima me te ono. Hinewai, e peke ki ngā taurua. Karangahia ngā tau i a koe e peke ana.
He ngohe tēnei hei whakapakari i te mōhio o te ākonga ki ngā tohutau, me te raupapa o ngā tau.	
E pai ana te whakamahi i ētahi kāri tohutau matirua, pērā i te 40, 41, 42, 43 ... 50.	

## Anga Tekau

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau ki te tautuhi tau matitahi me ngā tauira o roto i ngā whakaahuahanga o ēnei tau.

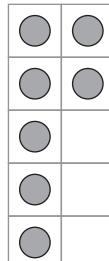
### Rauemi

- Anga Tekau (Rauemi Tārua 4-6)
- Kāri Tohutau 0 – 10 (Rauemi Tārua 4-1)

E pai ana kia hokihoki atu ki tēnei ngohe kia noho tangata whenua ai ki roto i te hinengaro o te ākonga ngā tauira o ngā tau 1 – 10.

### Hei Mahi 1

Ngā tohutohu	He tauira kōrero mā te pouako
<p>Whakaaturia tētahi o ngā kāri anga tekau (<b>Rauemi Tārua 4-6</b>), ka hono atu ai ki te tauira matimati e hāngai ana. Hei tauira, ko te 7.</p> <p>I te takanga o te wa, kia mōhio wawe ngā ākonga ki te maha o ngā ira i te anga tekau, te maha ranei o ngā matimati e whakaaturia ana, kāore e tatauria.</p> <p>Ko te whāinga, kia mau i a rātou te āhua o ngā tauhono me te 5 (arā, 5 + 1, 5 + 2, 5 + 3, 5 + 4, 5 + 5)</p>	<p>Titiro ki ngā ira i tēnei anga tekau. E hia ngā ira ki tēnei taha o te anga? Tatauria. 1, 2, 3, 4, 5.</p> <p>E hia ki tēnei taha? 1, 2.</p> <p>Whakaaturia mai kia 5 ngā matimati ki tētahi ringaringa, kia 2 ki tētahi.</p> <p>E hia katoa ngā matimati? 1, 2, 3, 4, 5, 6, 7.</p> <p>E hia katoa ngā ira i te anga tekau? E 7.</p> <p>Ka pai, kāore he take o te tatau. He ōrite te maha o ngā matimati me te maha o ngā ira.</p>



### Hei Mahi 2

Ngā tohutohu	He tauira kōrero mā te pouako
<p>Whakaaturia tētahi kāri tau (<b>Rauemi Tārua 4-1</b>), ka tono ai i ngā ākonga kia kimi i te anga tekau e hāngai ana, kia whakaatu rānei i taua tau ki ū rātou matimati.</p> <p>Tonoa rātou kia whakaatu i te tau ki ū rātou matimati ki muri tuara, kia kore ai e kitea. Mā konei e pakari ai rātou ki te whakaahua i te tauira o te tau ki ū rātou hinengaro.</p>	<p>He aha tēnei kāri tau? Ko te 8.</p> <p>Whakaaturia tēnei tau ki ū koutou matimati. Tatauria ngā matimati. 1, 2, 3, 4, 5, 6, 7, 8.</p> <p>E hia ki tēnei ringaringa? E 5.</p>

Ko te whāinga, kia mau i a rātou te āhua o ngā tauhono me te 5 (arā, 5 + 1, 5 + 2, 5 + 3, 5 + 4, 5 + 5)	E hia atu anō ki tēnei? E 3.  Me huna ō koutou ringaringa ki muri tuara. Anei te tau hei whakaatu ki ō koutou matimati (6). E hia ngā matimati ki ia ringaringa? E 5 ki tētahi, kotahi ki tētahi.
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### Hei Mahi 3

Ngā tohutohu	He tauira kōrero mā te pouako
<p>He mahi takirua tēnei. Whakanōhia ngā ākonga, tētahi ki muri i tētahi.</p> <p>Whakaaturia tētahi kāri anga tekau ki te ākonga i muri.</p> <p>Ko tāna mahi he āta pātōtō i te tauira o ngā ira ki te tuara o tana hoa e noho ana ki mua i a ia.</p> <p>Ko tā te ākonga i mua, he tuhi i taua tohutau ki te rangi, he whakaatu anō hoki ki ūna matimati.</p>	<p>He mahi takirua tēnei. Ka noho tētahi o kōrua ki muri i tētahi. Māku e whakaatu tētahi kāri anga tekau ki te ākonga o muri. Kaua e whāki atu ki te ākonga o mua.</p> <p>Āta pātōtōtia te tuara o tō hoa e noho ana ki mua i a koe, kia mōhio ai ia ki te maha o ngā ira.</p> <p>Ko te ākonga o mua, māna e tuhi taua tau ki te rangi. Kātahi ka whakaaturia ngā matimati e hāngai ana.</p>

### Hei Mahi 4

Kia tino taunga ngā ākonga ki te whakamahi i ngā kāri anga tekau, tonoa rātou ki te tautuhi i te maha o ngā ira me te maha o ngā wāhi wātea o ia kāri.
Ko te 10 te tapeke o ngā ira me ngā wāhi wātea, ā, ka tuhia hei whārite, kia mōhio ai ngā ākonga ki ngā tauhono o te 10 (pērā i te $6 + 4 = 10$ , te $7 + 3 = 10 \dots$ ).

## Ngā Tauhono me te Tekau, ngā Tau Ngahuru

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau ki te tautuhi i ngā tau 10 – 19 me ngā tau ngahuru (10, 20, 30 … 80, 90).

### Hei whakamārama

Ina āta whakarongo ngā ākonga ki ngā ingoa Māori mō ngā tau 10 – 20, tērā ka mārama tonu rātou ki te hanga o aua tau, arā te uara tū o ngā mati. Hei tauira, ko te ‘tekau mā whā’ e mea ana ka honoa te 10 me te 4. Ka mārama hoki ki ngā tau ngahuru, pērā i te ‘toru tekau’ e mea ana e 3 ngā 10.

### Rauemi

- Paparau (Rauemi Tārua 4-4)
- Anga Tekau (Rauemi Tārua 4-6)
- He anga pireppire
- He porotiti pūataata

### Hei Mahi 1

Ngā tohutohu	He tauira kōrero mā te pouako
<p>He mahi takirua tēnei. Whakanōhia ngā ākonga, kanohi ki te kanohi.</p> <p>Mā tētahi o te takirua e whakaatu ngā matimati 10. Mā te ākonga tuarua e whakaatu ētahi matimati mai i te 1 ki te 9 (hei tauira, ko te 8).</p> <p>Ka kōrero te ākonga tuatahi ‘tekau’. Ka kōrero te ākonga tuarua i te maha o ūna matimati, arā, ko te ‘waru’. Kātahi ka kōrero tahi rāua i te katoa o ngā matimati ‘tekau mā waru’.</p>	<p>He mahi takirua tēnei. E noho me tō hoa, kanohi ki te kanohi.</p> <p>Mā tētahi o kōrua e whakaatu ūna matimati katoa. E hia ērā? 10.</p> <p>Mā te ākonga tuarua e whakaatu ētahi o ūna matimati. Kei a ia te whiriwhiri mō te maha o ngā matimati hei whakaatu māna.</p> <p>E hia ngā matimati o te ākonga tuatahi? 10.</p> <p>E hia ngā matimati o te ākonga tuarua? E 8.</p> <p>E hia katoa ū kōrua matimati ko tō hoa? 18.</p>

### Hei Mahi 2

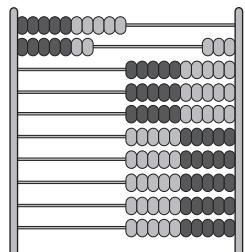
Ngā tohutohu	He tauira kōrero mā te pouako
<p>Māu e tuhi tētahi tau ki te papa tuhituhi, ka tono ai i ngā ākonga takirua ki te whakaatu i taua tau ki ū rāua matimati.</p>	<p>Anei tētahi tau hei whakaatu mā kōrua ko tō hoa ki ū kōrua matimati (16).</p> <p>E hia ngā matimati o tētahi? 10.</p>

Tuhia te whārite tāpiritanga e hāngai ana ki te papa tuhituhi.	E hia ngā matimati o tētahi? E 6.  E hia katoa ō kōrua matimati? 16.  He aha te whārite hei honohono i ngā matimati o tēnā me tēnā o kōrua? $10 + 6 = 16$ .  10 ngā matimati o tēnā. E 6 ngā matimati o tēnā. Tāpiria te 10 me te 6, ka hia? Ka 16.
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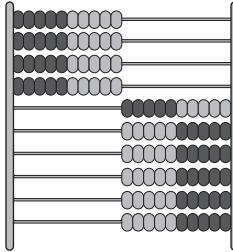
### Hei Mahi 3

Ngā tohutohu	He tauira kōrero mā te pouako																																																																																																				
<p>Tonoa mā tētahi o te takirua e tohutohu tētahi tau i te paparau (mai i te 10 ki te 20).</p> <p>Mā te ākonga tuarua e pānui taua tau.</p> <p>Mā rāua tahi e whakaatu taua tau ki ūrāua matimati.</p>	<p>Titiro ki te paparau (<b>Rauemi Tārua 4-4</b>). Kei hea ngā tau mai i te 10 ki te 20? Kei te kapu tuarua.</p> <p>Mā tētahi o kōrua e tohu tētahi o ngā tau mai i te 10 ki te 20.</p> <p>Mā te ākonga tuarua e kōrero mai taua tau.</p> <p>Whakaaturia taua tau ki ūrāua matimati.</p> <table border="1"> <tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr> <tr><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td></tr> <tr><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td></tr> <tr><td>31</td><td>32</td><td>33</td><td>34</td><td>35</td><td>36</td><td>37</td><td>38</td><td>39</td><td>40</td></tr> <tr><td>41</td><td>42</td><td>43</td><td>44</td><td>45</td><td>46</td><td>47</td><td>48</td><td>49</td><td>50</td></tr> <tr><td>51</td><td>52</td><td>53</td><td>54</td><td>55</td><td>56</td><td>57</td><td>58</td><td>59</td><td>60</td></tr> <tr><td>61</td><td>62</td><td>63</td><td>64</td><td>65</td><td>66</td><td>67</td><td>68</td><td>69</td><td>70</td></tr> <tr><td>71</td><td>72</td><td>73</td><td>74</td><td>75</td><td>76</td><td>77</td><td>78</td><td>79</td><td>80</td></tr> <tr><td>81</td><td>82</td><td>83</td><td>84</td><td>85</td><td>86</td><td>87</td><td>88</td><td>89</td><td>90</td></tr> <tr><td>91</td><td>92</td><td>93</td><td>94</td><td>95</td><td>96</td><td>97</td><td>98</td><td>99</td><td>100</td></tr> </table>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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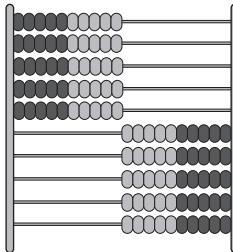
### Hei Mahi 4

Ngā tohutohu	He tauira kōrero mā te pouako
Whakaaturia tētahi tau ki te anga pirepire. Ko tā ngā ākonga he kōrero i te tau e whakaaturia ana, he tuhituhi hoki i te whārite tāpiritanga mō taua tau.	<p>Anei tētahi tau ki te anga pirepire. He aha tēnei tau? Ko te 17.</p> <p>10 ngā pirepire i te rārangī tuatahi, e 7 ngā pirepire i te rārangī tuarua. He aha te whārite tāpiritanga? <math>10 + 7 = 17</math>.</p> 

### Hei Mahi 5

Ngā tohutohu	He tauira kōrero mā te pouako
Whakaaturia tētahi tau ngahuru ki te anga pirepire. Ko tā ngā ākonga he kōrero i te tau e whakaaturia ana, he tauhuhi hoki i taua tau ki te paparau.	<p>Anei tētahi tau ki te anga pirepire. He aha tēnei tau? Ko te 40.</p> <p>E hia ngā pirepire ki ia rārangī? 10.</p> <p>E hia ngā rārangī pirepire kua nukua ki te taha? E 4.</p> <p>E whā ngā tekau. E hia katoa ngā pirepire? E 40.</p> <p>Tohua mai te 40 ki te paparau.</p> 

### Hei Mahi 6

Ngā tohutohu	He tauira kōrero mā te pouako
Whakaaturia tētahi kāri tau, ka tono ai i ngā ākonga ki te whakaatu i taua tau ki te anga pirepire.	<p>Anei tētahi tau hei whakaatu māu ki te anga pirepire (50).</p> <p>E hia ngā rārangī o te tekau kua nukua ki te taha? E 5.</p> <p>He aha te tau? Ko te 50.</p> 

### Hei Mahi 7

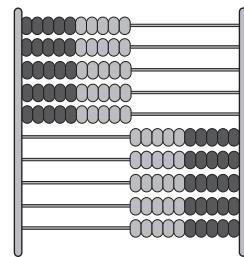
Ngā tohutohu	He tauira kōrero mā te pouako																																																																																																				
<p>He kēmu wharewhare tēnei. Hoatu he paparau me ētahi porotiti pūataata e 8 ki ia ākonga. Ka uhia ētahi tau e waru o te paparau ki ngā porotiti. Ko ngā tau 10–20, me ngā tau ngahuru (10, 20, 30 ... 80, 90) anake ngā tau e uhia.</p> <p>Mā te pouako e whakaatu tētahi tau ki te anga pirepire. Mēnā kua uhia taua tau ki te porotiti, ka tangohia ake te porotiti. Ka toa te ākonga tuatahi ki te tango i āna porotiti katoa.</p>	<p>Tohua mai ngā tau mai i te 11 ki te 20 i te paparau. Tohua mai ngā tau ngahuru, mai i te 10 ki te 100.</p> <p>Koia anake ngā tau hei whakamahi mō tēnei kēmu. Uhia kia 8 o ēnei tau ki ngā porotiti.</p> <table border="1"> <tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr> <tr><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td></tr> <tr><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td></tr> <tr><td>31</td><td>32</td><td>33</td><td>34</td><td>35</td><td>36</td><td>37</td><td>38</td><td>39</td><td>40</td></tr> <tr><td>41</td><td>42</td><td>43</td><td>44</td><td>45</td><td>46</td><td>47</td><td>48</td><td>49</td><td>50</td></tr> <tr><td>51</td><td>52</td><td>53</td><td>54</td><td>55</td><td>56</td><td>57</td><td>58</td><td>59</td><td>60</td></tr> <tr><td>61</td><td>62</td><td>63</td><td>64</td><td>65</td><td>66</td><td>67</td><td>68</td><td>69</td><td>70</td></tr> <tr><td>71</td><td>72</td><td>73</td><td>74</td><td>75</td><td>76</td><td>77</td><td>78</td><td>79</td><td>80</td></tr> <tr><td>81</td><td>82</td><td>83</td><td>84</td><td>85</td><td>86</td><td>87</td><td>88</td><td>89</td><td>90</td></tr> <tr><td>91</td><td>92</td><td>93</td><td>94</td><td>95</td><td>96</td><td>97</td><td>98</td><td>99</td><td>100</td></tr> </table>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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Titiro ki tēnei tau e whakaaturia ana ki te anga pirepire.

Mēnā kua uhia tēnei tau ki tō paparau, me tango taua porotiti ināianei.

Ko te ākonga tuatahi ki te tango i āna porotiti katoa, ko ia te toa.

Anei tētahi atu tau ...



## Kōwhiuwhiu Tau

Mahere Tau	0	1	2	3	4	5	6	7	8
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Whanaketanga	1a	1e	2a	2e	3a	3e	4a	4e	5a
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E ako ana ahau ki te tautuhi tauoti, tau ā-ira hoki.  
E ako ana ahau i te raupapa o ngā tau.

### Rauemi

- Kōwhiuwhiu Tau (he kōwhiuwhiu tau mā ia ākonga) (Rauemi Tārua 4-10)
- Kōwhiuwhiu Tau ā-Ira (he kōwhiuwhiu tau ā-ira mā ia ākonga) (Rauemi Tārua 4-18).

### Hei Mahi 1

Ngā tohutohu	He tauira kōrero mā te pouako
<p>Tonoa ngā ākonga kia whakaatu i tētahi tau ki ā rātou kōwhiuwhiu tau (<b>Rauemi Tārua 4-10</b>).</p> <p>Kia hāngai tonu te tau ki te kaupae o ngā ākonga. Hei tauira:</p> <ul style="list-style-type: none"> <li>• tau matitahi: 8, 4, 7 ...</li> <li>• tau matirua: 24, 48, 67 ...</li> <li>• tau matitoru: 362, 538, 954 ...</li> <li>• tau matimaha: 234,068, 34,567, 1,456,824 ...</li> </ul>	<p>Whakaaturia te 8 ki te kōwhiuwhiu tau.</p> <p>Whakaaturia te rima tekau mā waru ki te kōwhiuwhiu tau. Ko tēhea te mati ki te taha mauī?</p> <p>Ko te 5.</p> <p>Ko tēhea te mati ki te taha matau?</p> <p>Ko te 8.</p> <p>Kōrerohia mai te tau.</p> <p>Rima tekau mā waru.</p> <p>E tohu ana te 5 i te aha?</p> <p>E 5 ngā tekau.</p>

### Hei Mahi 2

Ngā tohutohu	He tauira kōrero mā te pouako
<p>Kia pērā anō i te Hei Mahi 1, engari me whakamahi te kōwhiuwhiu tau e whai kāri ira ana (<b>Rauemi Tārua 4-18</b>). Ko tā ngā ākonga, he whakaatu, he pānui i ngā tau ā-ira.</p> <p><b>Kia mataara:</b> He mea nui kia tika te pānui i ngā tau ā-ira. Hei tauira, ko te 6.75:</p> <ul style="list-style-type: none"> <li>• ono ira whitu rima</li> <li>• ehara i te ono ira whitu <b>tekau</b> mā rima!</li> </ul>	<p>Whakaaturia te toru ira waru ki te kōwhiuwhiu tau.</p> <p>Ko tēhea te mati ki te taha mauī?</p> <p>Ko te 3.</p> <p>Ko tēhea te mati ki te taha matau?</p> <p>Ko te 8.</p> <p>Kōrerohia mai te tau.</p> <p>Toru ira waru.</p> <p>E tohu ana te 8 i te aha?</p> <p>E 8 ngā hautekau.</p>

### Hei Mahi 3

Ngā tohutohu	He tauira kōrero mā te pouako
Whakamahia te kōwhiuwhiu tau hei whakapakari i te mōhio o te ākonga ki te raupapa o ngā tau.	<p>Whakaaturia mai te tau he kotahi te nui ake i te:      7, 3, 6 ...      24, 86, 97 ...      472, 397, 690 ...      2.2, 55.7, 3.03 ...</p> <p>Whakaaturia mai te tau he kotahi te iti ake i te:      8, 4, 2 ...      65, 70, 32 ...      341, 510, 375 ...      2.7, 46.3, 3.96 ...</p> <p>Whakaaturia mai te tau he 10 te nui ake i te:      4, 13, 57, 95 ...      450, 238, 970 ...      6.7, 14.3, 9.06 ...</p> <p>Whakaaturia mai te tau he 100 te iti ake i te:      863, 886, 450 ...</p> <p>Whakaaturia mai te tau he kotahi hautekau te nui ake i te:      5.3, 8.6, 6.68, 9.0 ...</p> <p>Whakaaturia mai te tau e rua te nui ake i te ...</p> <p>Whakaaturia mai te tau kei waenganui i te 23 me te 25 ...</p> <p>Whakaaturia mai te tau ā-ira e ūrite ana ki te:  <math>\frac{1}{2}</math>, <math>\frac{1}{4}</math>, <math>\frac{3}{4}</math>, <math>\frac{2}{5}</math>, <math>\frac{5}{8}</math>, <math>1\frac{3}{4}</math>, <math>3\frac{1}{5}</math> ...</p> <p>Whakaaturia mai te tau ā-ira e ūrite ana ki te:      40%, 85%, 123%, 12.5% ...</p>

## He Whare Uara Tū

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau ki te tautuhi i ngā tau matimaha, tae atu ki ngā tiriona.

### Rauemi

- Whare Uara Tū (Rauemi Tārua 4-11)
- Kāri Tohutau 0 – 10 (Rauemi Tārua 4-1)

### Hei Mahi 1

Ngā tohutohu			He tauira kōrero mā te pouako																																																
<p>Whakamāramatia te hanga o ngā whare uara tū, me te pānui tika i ngā tau nui.</p> <table border="1"> <thead> <tr> <th colspan="3">Whare Mātāmua</th> </tr> <tr> <th>rau 100</th><th>tekau 10</th><th>tahi 1</th></tr> </thead> <tbody> <tr> <td>3</td><td>5</td><td>8</td></tr> </tbody> </table>			Whare Mātāmua			rau 100	tekau 10	tahi 1	3	5	8	<p>Titiro ki te pikitia nei. He whare uara tū tēnei. E 3 ngā rūma o te whare, ko tētahi mō ngā rau, ko tētahi mō ngā tekau, ko tētahi mō ngā tahī.</p> <p>Mēnā ka tuhia tētahi tau ki te whare uara tū, he māmā te pānui, he mārama hoki te kite atu i te uara o ia mati. Ko te ‘toru rau rima tekau mā waru’ te tau e whakaaturia ana.</p> <p>E tohu ana te 5 i te aha?</p> <p>E 5 ngā tekau.</p>																																							
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<p>Tonoa ngā ākonga kia tuhi i ētahi tau ki ngā whare uara tū, ka pānui ai.</p> <table border="1"> <thead> <tr> <th colspan="3">Whare Mano</th> <th colspan="3">Whare Mātāmua</th> </tr> <tr> <th>rau 100,000</th><th>tekau 10,000</th><th>tahi 1,000</th><th>rau 100</th><th>tekau 10</th><th>tahi 1</th></tr> </thead> <tbody> <tr> <td>7</td><td>4</td><td>6</td><td>3</td><td>5</td><td>8</td></tr> </tbody> </table>			Whare Mano			Whare Mātāmua			rau 100,000	tekau 10,000	tahi 1,000	rau 100	tekau 10	tahi 1	7	4	6	3	5	8	<p>Ka hangaia tētahi anō whare ki te taha mauī. Ka kīia ko te whare o ngā mano. E toru anō ngā rūma – ko ngā rau mano, ngā tekau mano me ngā mano takitahi.</p> <p>He māmā te pānui i tēnei tau nui. Ko te ‘whitu rau whā tekau mā ono mano, toru rau rima tekau mā waru’.</p> <p>E tohu ana te 4 i te aha?</p> <p>I te whā tekau mano.</p>																														
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rau 100,000	tekau 10,000	tahi 1,000	rau 100	tekau 10	tahi 1																																														
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<p>Ka hangaia ētahi anō whare e toru ki te taha mauī. E toru anō ngā rūma o ēnei whare. Ko ēnei whare hei whakaatu i ngā tau tino nui. Ko te whare o ngā miriona, ko te whare o ngā piriona, me te whare o ngā tiriona.</p> <table border="1"> <thead> <tr> <th colspan="3">Whare Tiriona</th> <th colspan="3">Whare Piriona</th> <th colspan="3">Whare Miriona</th> <th colspan="3">Whare Mano</th> <th colspan="3">Whare Mātāmua</th> </tr> <tr> <th>rau 100,000,000,000</th><th>tekau 10,000,000,000</th><th>tahi 1,000,000,000</th><th>rau 100,000,000</th><th>tekau 10,000,000</th><th>tahi 1,000,000</th><th>rau 100,000,000</th><th>tekau 10,000,000</th><th>tahi 1,000,000</th><th>rau 100,000</th><th>tekau 10,000</th><th>tahi 1,000</th><th>rau 100</th><th>tekau 10</th><th>tahi 1</th></tr> </thead> <tbody> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </tbody> </table>							Whare Tiriona			Whare Piriona			Whare Miriona			Whare Mano			Whare Mātāmua			rau 100,000,000,000	tekau 10,000,000,000	tahi 1,000,000,000	rau 100,000,000	tekau 10,000,000	tahi 1,000,000	rau 100,000,000	tekau 10,000,000	tahi 1,000,000	rau 100,000	tekau 10,000	tahi 1,000	rau 100	tekau 10	tahi 1															
Whare Tiriona			Whare Piriona			Whare Miriona			Whare Mano			Whare Mātāmua																																							
rau 100,000,000,000	tekau 10,000,000,000	tahi 1,000,000,000	rau 100,000,000	tekau 10,000,000	tahi 1,000,000	rau 100,000,000	tekau 10,000,000	tahi 1,000,000	rau 100,000	tekau 10,000	tahi 1,000	rau 100	tekau 10	tahi 1																																					
<p>Tuhia tētahi tau nui ki te whare uara tū nei, ka pānui ai.</p>																																																			

Kia taunga ngā ākonga ki tēnei mahi, tonoa rātou kia pānui noa i te tau, kāore e tuhia ki te whare uara tū. Āta tirohia mēnā ka wehea te tau kia takitoru ngā mati, me te mōhio ki te tikanga o ia rōpū mati (pēnā he mano, he miriona, he piriona rānei).

### Hei whakawhānui

Tāpiria te whare uara tū ki te taha matau hei whakaatu i ngā hautekau, ngā haurau, me ngā haumano.

Whare Mātāmua			Whare ā-Ira		
rau 100	tekau 10	tahi 1	rau 10	tekau 100	tahi 1000
7	4	6	3	5	8





## Wāhanga 3

# Ngā Tau Hautanga



**Kia mōhiotia ai:** Kei te Wāhanga 1 me te Wāhanga 2 ētahi ngohe e hāngai ana ki te tauoti, engari he māmā tonu te whakawhānui i aua ngohe kia whai wāhi mai ai ngā momo hautanga, arā, te hautau noa, te hautanga ā-ira me te ūrau.

Kei te pouaka rauemi *He Pūtahi Pāngarau* ētahi atu ngohe e hāngai ana ki te haurua me te hauwhā.

## Kei a Wai te Keke Nui?

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau ki te raupapa i ngā hautau waetahi.

### Hei whakamārama

Ko te 1 te taurunga o ngā hautau waetahi katoa. Koia nei te huinga hautau waetahi:  $\{\frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \frac{1}{5}, \frac{1}{6}, \frac{1}{7} \dots\}$ . E tohu ana te tauraro o te hautau i te maha o ngā wehenga ūrite o tētahi mea. Nō reira, mēnā he nui te tauraro, he iti te hautanga waetahi.

### Rauemi

- Wehenga Hautau (Rauemi Tārua 4-19)

### Hei Mahi 1

Ngā tohutohu	He tauira kōrero mā te pouako
<p>Tuhia te rapanga nei ki te papa tuhituhi, ka pānui tahi ai me ngā ākonga:</p> <p>Ka riro i a Hēni te <math>\frac{1}{5}</math> o tētahi keke.      Ka riro i a Taumutu te <math>\frac{1}{8}</math> o te keke.      Kei a wai te wehenga keke nui rawa atu?</p> <p>Whakatauiratia te <math>\frac{1}{5}</math> me te <math>\frac{1}{8}</math> ki ngā rauemi hautau pēnei i ngā wehenga porowhita (<b>Rauemi Tārua 4-19</b>), ka whakawhitihitī kōrero ai mō te tikanga o te tauraro o tētahi hautau.</p> <p>Tuhia te whakatairitenga hautau ki te papa tuhituhi.</p>	<p>Me āta whakaaro te wehenga porowhita e rite ana ki te <math>\frac{1}{5}</math>.</p> <p>E tohu ana te 5 i te aha?      Koirā te maha o ngā wehenga ūrite o te porowhita.</p> <p>Nō reira me āta kimi te porowhita kua wehea ki ētahi wehenga ūrite e 5. Whakatakotoria te <math>\frac{1}{5}</math> ki konā.</p> <p>Ināianei, me kimi te wehenga porowhita e rite ana ki te <math>\frac{1}{8}</math>.</p> <p>E tohu ana te 8 i te aha?      E 8 ngā wehenga ūrite o te porowhita.</p> <p>Nō reira me āta kimi te porowhita kua wehea ki ētahi wehenga ūrite e 8.</p> <p>Whakatakotoria te <math>\frac{1}{8}</math> ki te taha o te <math>\frac{1}{5}</math>. Ko tēhea te hautau nui rawa atu?      Ko te <math>\frac{1}{5}</math>.</p> <p>Me pēnei te tuhi i roto i te reo pāngarau: <math>\frac{1}{5} &gt; \frac{1}{8}</math>.      Ko te tikanga o te tohu ‘&gt;’ ko te ‘nui ake (i te)’. E mea ana te rerenga pāngarau, ‘He nui ake te kotahi haurima i te kotahi hauwaru’.</p> <p>Anei anō tētahi tuhinga pāngarau: <math>\frac{1}{8} &lt; \frac{1}{5}</math>. He aha ki ōu whakaaro te tikanga o te tohu ‘&lt;’?      He iti ake. He iti ake te kotahi hauwaru i te kotahi haurima.</p>

Kia pērā anō te whakamahi i ngā rauemi hei whakatairite i ēnei takirua hautau:

$$\text{te } \frac{1}{4} \text{ me te } \frac{1}{3} \quad \text{te } \frac{1}{6} \text{ me te } \frac{1}{8} \quad \text{te } \frac{1}{5} \text{ me te } \frac{1}{3} \quad \text{te } \frac{1}{8} \text{ me te } \frac{1}{4} \quad \dots$$

### Hei Mahi 2

Whakatairitea ēnei takirua hautau, ka tuhi ai i te rerenga pāngarau e hāngai ana:

$$\begin{array}{lll} \text{te } \frac{1}{10} \text{ me te } \frac{1}{3} & \text{te } \frac{1}{12} \text{ me te } \frac{1}{8} & \text{te } \frac{1}{15} \text{ me te } \frac{1}{23} \\ \text{te } \frac{1}{50} \text{ me te } \frac{1}{27} & \text{te } \frac{1}{67} \text{ me te } \frac{1}{68} & \text{te } \frac{1}{59} \text{ me te } \frac{1}{95} \end{array} \quad \dots$$

Whakawhitihiti kōrero mō te take he nui ake tētahi i tētahi.

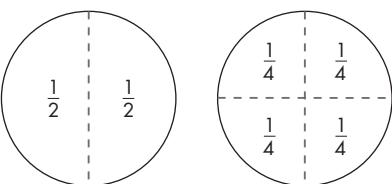
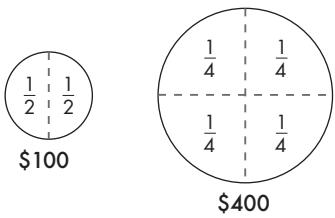
## He Nui Ake te Hauwhā i te Haurua!

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau i tētahi tikanga mō te whakatairite hautau.

### Hei Mahi 1

Ngā tohutohu	He tauira kōrero mā te pouako
<p>Whakawhitiwhiti kōrero mō te tika, te hē rānei o te rerenga pāngarau nei: <math>\frac{1}{2} &gt; \frac{1}{4}</math></p> <p>Tuhia te rapanga nei ki te papa tuhituhi, ka whakawhitiwhiti kōrero ai mō te rahi o te <math>\frac{1}{2}</math> me te <math>\frac{1}{4}</math> i roto i te rapanga:</p> <p>Ka riro i a Ana te kotahi haurua (<math>\frac{1}{2}</math>) o te \$100. Ka riro i a Mere te kotahi hauwhā (<math>\frac{1}{4}</math>) o te \$400. Ka riro i a wai te pūtea nui rawa?</p> 	<p>Anei tētahi rerenga pāngarau. Me pānui mai: <math>\frac{1}{2} &gt; \frac{1}{4}</math> He nui ake te kotahi haurua i te kotahi hauwhā.</p> <p>Mēnā ka tirohia ngā hautau porowhita, e tika ana te rerenga kōrero, arā, he nui ake te haurua i te hauwhā, nā te mea he ōrite te rahi o ngā porowhita.</p> <p>I ētahi wā, he nui ake te hauwhā i te haurua. Anei te rapanga hei pānui mā tātou.</p> <p>He aha te haurua o te \$100? Ko te \$50.</p> <p>He aha te hauwhā o te \$400? Ko te \$100.</p> <p>Ka riro i a wai te pūtea nui rawa? He nui ake te pūtea a Mere.</p> <p>Nō reira, i tēnei rapanga, he nui ake te hauwhā i te haurua. He aha ai?</p> <p>Mēnā ka tirotiro i ngā wehenga porowita, he ōrite te rahi o te porowhita ka wehea ki ngā haurua me te porowhita ka wehea ki ngā hauwhā.</p>  <p>Engari he rerekē te rahi o te pūtea i hauruatia mā Ana, me te pūtea i hauwhātia mā Mere. He nui ake te \$400 i te \$100, nō reira i nui ake ai te hauwhā o te \$400 i te haurua o te \$100.</p>

## Hei Mahi 2

Tuhia te tūtohi nei ki te papa tuhituhi, ka whakawhiti kōrero ai mō te haurua o te utu ā-wiki a Mereana me te hauwhā o te utu ā-wiki a Himiona:

	wiki 1	wiki 2	wiki 3
Te utu ā-wiki a Mereana	\$8	\$12	\$10
Te utu ā-wiki a Himiona	\$16	\$24	\$20

Hauruatia te utu a Mereana, hauwhātia te utu a Himiona, ka tuhi atu ai ki te tūtohi:

	wiki 1	wiki 2	wiki 3
Te utu ā-wiki a Mereana	\$8	\$12	\$10
Te utu ā-wiki a Himiona	\$16	\$24	\$20
Te haurua o te utu a Mereana	\$4	\$6	\$5
Te hauwhā o te utu a Himiona	\$4	\$6	\$5

Titiro ki te tūtohi nei e whakaatu ana i te utu ā-wiki a Mereana rāua ko Himiona.

He rearua te utu a Himiona i te utu a Mereana. He haurua te utu a Mereana i te utu a Himiona.

Ināianei, kua whakaaturia te haurua o te utu ā-wiki a Mereana me te hauwhā o te utu ā-wiki a Himiona.  
He aha te kōrero e kitea mai ana?

He ūrite. He ūrite te haurua o te utu a Mereana me te hauwhā o te utu a Himiona.

He aha ētahi rerenga pāngarau e hāngai ana ki tēnei āhuatanga e kitea mai ana i te tutohi?

$$\frac{1}{2} \text{ o te } 8 = \frac{1}{4} \text{ o te } 16$$

$$\frac{1}{2} \text{ o te } 12 = \frac{1}{4} \text{ o te } 24$$

$$\frac{1}{2} \text{ o te } 10 = \frac{1}{4} \text{ o te } 20$$

He aha ētahi atu utu e tika ai tēnei āhuatanga?

Mēnā \$12 te utu a Mereana, \$24 te utu a Himiona:

$$\frac{1}{2} \text{ o te } 12 = \frac{1}{4} \text{ o te } 24$$

Tukuna he rapanga pēnei hei whiriwhiri mā ngā ākonga:

He ūrite te haurua o te utu a Pita ki te hautoru o te utu a Anahera. He aha ētahi utu e tika ai tēnei āhuatanga?

Hei tauira whakautu:

Te utu a Pita	\$6	\$12	\$18
Te utu a Anahera	\$9	\$18	\$27
Te haurua o te utu a Pita	\$3	\$6	\$9
Te hautoru o te utu a Anahera	\$3	\$6	\$9

# Ngā Hautanga ki te Rārangi Tau

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau ki te whakanoho hautau ki te wāhi tika i te rārangi tau.

## Rauemi

- He ngaku pepa kotahi mita te roa
- He rūri mita
- He kini pepa

## Hei Mahi 1

Ngā tohutohu	He tauira kōrero mā te pouako
<p>Tapahia he ngaku pepa kia 1 mita te roa, ka hoatu ai ki ngā ākonga. Ko tā ngā ākonga he whakaatu i te <math>\frac{1}{2}</math>, te <math>\frac{1}{4}</math> me te <math>\frac{3}{4}</math> ki te ngaku pepa.</p> <p>Whakawhitihiti kōrero mō ngā rautaki hei whakatutuki i tēnei mahi.</p> <p>Whakamāramatia ngā hautau ūrite.</p>	<p>Anei te ngaku pepa, kotahi mita te roa. Ko tā koutou mahi, he whakapiri i ētahi kini pepa hei whakaatu i te haurua o te pepa, te hauwhā me te toru hauwhā.</p>  <p>Whakamāramatia mai te huarahi i whāia hei whakamau i ngā kini pepa ki ērā wāhi o te ngaku pepa.</p> <p>He tauira whakautu:</p> <ul style="list-style-type: none"> <li>• Whētuia te pepa kia rua ngā wehenga ūrite, ko te haurua tēnā. Whētuia kia haurua anō, ko te hauwhā tēnā.</li> <li>• Whakamahia te rūri mita. 100cm te roa o te pepa. Ko te 50cm te haurua, ko te 25 te hauwhā nā te mea e 4 ngā 25 kei roto i te 100. Ko te 75cm te toru hauwhā.</li> </ul> <p>Nō reira he ūrite te <math>\frac{50}{100}</math> ki te <math>\frac{1}{2}</math>, nā te mea ko te 50cm te kotahi haurua o te 100cm.</p> <p>He aha te hautau e ūrite ana ki te hauwhā?</p> <p>Ko te <math>\frac{25}{100}</math> nā te mea ko te 25cm te kotahi hauwhā o te 100cm.</p> <p>He aha te hautau e ūrite ana ki te <math>\frac{3}{4}</math>?</p> <p>Ko te <math>\frac{75}{100}</math> nā te mea ko te 75cm te toru hauwhā o te 100cm.</p> <p>Me tuhi ēnei hautau ūrite:</p> $\frac{1}{2} = \frac{50}{100} \qquad \frac{1}{4} = \frac{25}{100} \qquad \frac{3}{4} = \frac{75}{100}$

Kia pērā anō te mahi hei whakaatu i ēnei hautau ki te ngaku pepa, me te tuhi i ngā hautau e ūrite ana:

$\frac{2}{4}, \frac{4}{4}, \frac{1}{5}, \frac{2}{5}, \frac{3}{5}, \frac{4}{5}, \frac{5}{5}, \frac{1}{10}, \frac{2}{10} \dots$

## Hei Mahi 2

Ngā tohutohu	He tauira kōrero mā te pouako
<p>Whakawhitiwhiti kōrero mō te tikanga o ngā hautau e ūrite ana ki te kotahi, arā:</p> $\frac{2}{2} = 1$ $\frac{4}{4} = 1$ $\frac{5}{5} = 1$ <p>...</p>	<p>Titiro anō ki ngā ngaku pepa me ngā hautau kua whakaaturia. E hia ngā hauwhā kei roto i te mita kotahi? E 4.</p> <p>He aha te whārite mō tēnei?</p> $\frac{4}{4} = 1$ <p>He aha ētahi atu hautau e ūrite ana ki te kotahi?</p> $\frac{5}{5}, \frac{10}{10} \dots$

## Hei Mahi 3

Ngā tohutohu	He tauira kōrero mā te pouako
<p>Tonoa ngā ākonga kia āta whakaaro i te wāhi noho o ēnei hautau ki te ngaku pepa:</p> $\frac{1}{8}, \frac{2}{8}, \frac{3}{8}, \frac{4}{8}, \frac{5}{8}, \frac{6}{8}, \frac{7}{8}, \frac{8}{8}, \frac{1}{3}, \frac{2}{3}, \frac{3}{3}$ <p>Whakamahia te rūri mita hei tohu i ngā hautau nei ki te ngaku pepa.</p>	<p>Me āta whakaaro ki hea te wāhi noho o te kotahi hauwaru ki te ngaku pepa.</p> <p>Anei te hauwhā. Ko te hauwaru te haurua o tēnā.</p> <p>E hia mitamano i te mita kotahi?</p> <p>1,000.</p> <p>He aha te hauwaru o te 1,000?</p> <p>Ko te 500 te haurua, ko te 250 te hauwhā, ko te 125 te hauwaru.</p> <p>Whakamahia te rūri mita, ka tohu ai i te wāhi tika mō te kotahi hauwaru. E hia ngā mitamano (mm) kei roto i te hauwaru mita?</p> <p>125.</p> <p>He aha te hautau e ūrite ana ki te hauwaru?</p> $\frac{125}{1,000} = \frac{1}{8}$

## Hei whakawhānui

Whakatakotoria he ngaku pepa ki te papa, kia 5 mita te roa. Tohua te 0, te 1, te 2, te 3, te 4 me te 5 ki tēnei rārangī tau. Tonoa ngā ākonga kia whakamahi i te rūri mita hei whakanoho i ngā tau ā-ira nei ki te rārangī tau:

2.5, 1.75, 4.99, 1.46, 3.5, 2.793, 3.333, 0.079, 0.001 ...

## Ko Wai ka Toa?

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau ki te raupapa tau ā-ira, kia 4 ngā mati ā-ira.

### Hei whakamārama

Ka pōhēhē ētahi ākonga he nui ake te 0.75 i te 0.8, nā te mea he nui ake te 75 i te 8. Me arataki ngā ākonga kia tirotiro i te uara tū o te mati kei te taha mauī o te tau, nā te mea koia rā te mati e tino whaitake ana hei tohu i te rahi o te tau. He nui ake te 8 hautekau i te 7 hautekau, nō reira he nui ake te 0.8 i te 0.75. Kāore he take o te mati 5 i te tau 0.75 hei whakatairite i ēnei tau ā-ira.

### Hei Mahi 1

Ngā tohutohu		He tauira kōrero mā te pouako
Tuhia te tūtohi nei ki te papa tuhituhi, e whakaatu ana i te roa o ngā peke i tētahi whakataetae. Whakawhitiwhiti kōrero mō te toa, te tuarua, me te tuatoru o ngā tāngata i tēnei whakataetae:		Titiro ki te tūtohi nei e whakaatu ana i te roa o ngā peke i tētahi whakataetae nui o te motu. Ko wai te toa o tēnei whakataetae? Nā wai te peke roa rawa atu? Ko Chan te toa. Nāna te peke roa rawa atu.
Ingoa whānau	Roa o te peke (m)	He pēhea tātou i mōhio ai nā Chan te peke roa rawa atu? E toru ngā tāngata i eke ki tua atu o te 8 mita. Ko Smith, ko Höhepa, ko Chan. Me titiro ki ngā hautekau mita a ēnei tāngata tokotoru. E 2 hautekau mita i te peke a Chan, kotahi hautekau i te peke a Höhepa, karekau he hautekau mita i te peke a Smith. Nō reira koinei te raupapa mai o ngā toa o tēnei whakataetae: Chan 8.2 Höhepa 8.19 Smith 8.06

Kia pērā anō te mahi hei raupapa i ngā huinga tau e toru nei. Mēnā kei te raruraru ngā ākonga, he pai pea te whakaatu i ngā tau ā-ira ki te whare uara tū, mā reira e tino kitea ai te uara o ia mati:

Huinga tau 1	Huinga tau 2	Huinga tau 3
145.678	0.09	5.6
145.09	0.081	5.0678
145.005	0.5	5.341
145.9	0.592	5.09
145.2	0.57	5.3481

## Te Raupapa Hautau

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

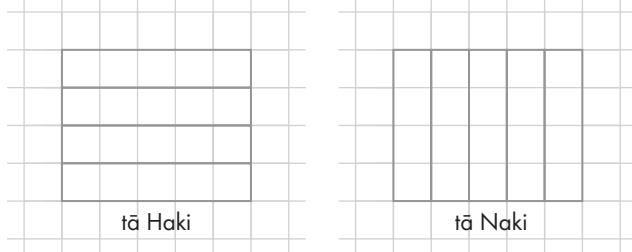
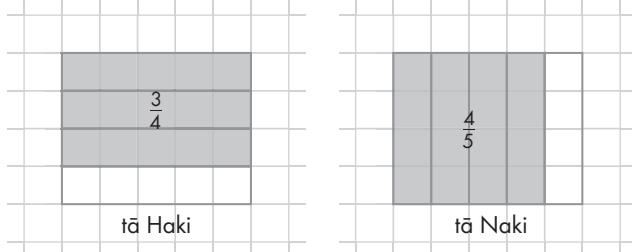
Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau ki te whakatairite hautau.

### Rauemi

- Tukutuku Nui (he pepa tukutuku, kia nui ngā wehenga) (Rauemi Tārua 4-27)
- He pepa tukutuku noa

### Hei Mahi 1

Ngā tohutohu	He tauira kōrero mā te pouako
<p>Tuhia te rapanga nei ki te papa tuhituhi, ka pānui tahi ai me ngā ākonga:</p> <p>Kua hokona e Haki rāua ko Naki ētahi parehe, he tapawhā hāngai te āhua, he rite anō te rahi. Ka tapahia e Haki tāna ki ngā hauwhā, ā, ka pau te <math>\frac{3}{4}</math> o tāna parehe. Ka tapahia e Naki tāna parehe ki ngā haurima, ā, ka pau te <math>\frac{4}{5}</math>. I pau i a wai te wāhanga parehe nui rawa atu?</p>	<p>Tuhia kia rua ngā tapawhā hāngai ki te pepa tukutuku nui, kia 5 mā te 4. Ko tētahi hei tohu i te parehe a Haki, ko tētahi hei tohu i tā Naki.</p> <p>Tuhia he rārangī hei whakaatu i ngā wehenga ūrite e 4 i te parehe a Haki. Tuhia he rārangī kia 5 ngā wehenga ūrite i te parehe a Naki.</p>  <p>tā Haki                      tā Naki</p>
	<p>Kaurukutia te <math>\frac{3}{4}</math> o te parehe a Haki, kia <math>\frac{4}{5}</math> o te parehe a Naki. Koia nei ngā wāhanga i pau i tēnā, i tēnā o rāua.</p>  <p>tā Haki                      tā Naki</p> <p>E hia katoa ngā tapawhā iti i te katoa o ngā parehe nei? E 20 nā te mea e 4 mā te 5 te rahi o ngā parehe.</p> <p>Nō reira ko ia tapawhā rite paku hei tohu i te haurua-tekau. E hia haurua-tekau o te parehe i pau i a Haki?</p> <p><math>\frac{15}{20}</math>.</p> <p>E hia ngā haurua-tekau i pau i a Naki?</p> <p><math>\frac{16}{20}</math>.</p>

Tuhia te rerenga pāngarau e hāngai ana ki tēnei mahi:

$$\frac{16}{20} > \frac{15}{20}, \text{ nō reira } \frac{4}{5} > \frac{3}{4}.$$

Nō reira, i pau i a wai te wāhangā parehe nui rawa atu?  
He nui ake te wāhangā i pau i a Naki.

Kia pērā anō te mahi hei whakatairite i ngā takirua hautau nei:

- te  $\frac{2}{3}$  me te  $\frac{3}{4}$
- te  $\frac{5}{6}$  me te  $\frac{4}{5}$
- te  $\frac{7}{10}$  me te  $\frac{2}{3}$
- te  $\frac{5}{8}$  me te  $\frac{3}{5}$

### Hei whakawhānui 1

Tonoa ngā ākonga kia kimi i te tauraro pātahi o ēnei takirua hautau, ka whakatairite ai:

1. te  $\frac{2}{3}$  me te  $\frac{13}{20}$

Ko te 60 te tauraro pātahi.

$$\frac{2}{3} = \frac{40}{60}, \frac{13}{20} = \frac{39}{60}$$

$$\frac{40}{60} > \frac{39}{60}, \text{ nō reira } \frac{2}{3} > \frac{13}{20}$$

2. te  $\frac{7}{11}$  me te  $\frac{3}{5}$

Ko te 55 te tauraro pātahi.

$$\frac{7}{11} = \frac{35}{55}, \frac{3}{5} = \frac{33}{55}$$

$$\frac{35}{55} > \frac{33}{55}, \text{ nō reira } \frac{7}{11} > \frac{3}{5}$$

3. te  $\frac{69}{100}$  me te  $\frac{2}{3}$

Ko te 300 te tauraro pātahi.

$$\frac{69}{100} = \frac{207}{300}, \frac{2}{3} = \frac{200}{300}$$

$$\frac{207}{300} > \frac{200}{300}, \text{ nō reira } \frac{69}{100} > \frac{2}{3}$$

### Hei whakawhānui 2

Tonoa ngā ākonga kia raupapa i ngā huinga hautau nei, mai i te iti ki te rahi:

- $\frac{3}{5}, \frac{2}{3}, \frac{1}{2}$
- $\frac{7}{10}, \frac{2}{3}, \frac{1}{2}$

## Hautanga Ōrite

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

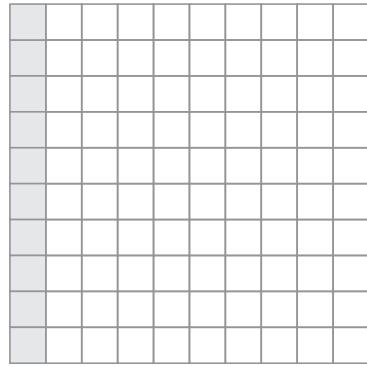
Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau i ngā hautanga ōrite, arā, ngā hautau noa, ngā hautanga ā-ira, me ngā ūrau.

### Rauemi

- Hautau Ōrite (Rauemi Tārua 4-28)
- Papa Hautanga ā-Ira (Rauemi Tārua 7-3)

### Hei Mahi 1

Ngā tohutohu	He tauira kōrero mā te pouako
<p>E hoki ki te tirotiro i te tikanga o te ūrau.</p> <p>Tonoa ngā ākonga kia whakaatu i te 10% ki te papa hautau ā-ira (<b>Rauemi Tārua 7-3</b>).</p>	<p>Ko te tikanga o te ūrau, ko te rerenga kōrero nei ‘o roto i te kotahi rau’. Arā, he hautau, ko te 100 te tauraro. He ūrite te 10% ki te 10 haurau: <math>10\% = \frac{10}{100}</math>.</p> <p>Titiro ki te papa hautau ā-ira nei. E hia ngā wehenga? 100.</p> <p>Kaurukutia te 10% o te papa hautau ā-ira. E hia ngā wehenga i kaurukutia?</p> <p>10.</p>  <p>10 ngā wehenga o roto i te 100, ko te 10% tērā.</p> <p>He aha te hautau me te hautau ā-ira e ūrite ana?</p> <p>Ko te <math>\frac{10}{100}</math>, te <math>\frac{1}{10}</math> me te 0.1.</p> <p>Arā: <math>10\% = \frac{10}{100} = \frac{1}{10} = 0.1</math></p>
<p>Kia pērā anō te arataki i ngā ākonga ki te whakaatu i ētahi atu ūrau me te tuhi i ngā hautau e ūrite ana, pēnei i ēnei:</p> <p>5%, 15%, 25%, 87%, 130% ...</p>	<p>Kei te <b>Rauemi Tārua 4-28</b> ētahi atu hautau ūrite hei whiriwhiri mā ngā ākonga. Me whakawhitihitī kōrero mō ngā otinga.</p>

## Te Whakaawhiwhi Hautau hei Ōrau

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau ki te huri i tētahi hautau hei ōrau āwhiwhi.

### Rauemi

- He tātaitai

### Hei Mahi 1

Ngā tohutohu	He tauira kōrero mā te pouako
<p>Tuhia te rapanga nei ki te papa tuhituhi, ka pānui tahi ai me ngā ākonga:</p> <p>He tāngata whakatipu āporo a Hēnare rāua ko Maria. He pirau te 344 o ngā āporo a Hēnare o roto i āna āporo 3,467 katoa. He pirau te 4,567 o ngā āporo 43,890 a Maria. Ko tēhea o ngā māra āporo nei i kaha ake te whakawhiua ki te pirau?</p>	<p>He aha te hautau o ngā āporo i te māra a Hēnare i pirau? Ko te <math>\frac{344}{3,467}</math>.</p> <p>Pēhea ngā āporo a Maria? Ko te <math>\frac{4,567}{43,890}</math>.</p> <p>He tino maha kē atu ngā āporo i te māra a Maria, engari, me titiro ki te hautau o ngā āporo i pirau i ia māra. Me pēhea te whakatairite i ngā hautau e rua nei?</p> <p>I te tuatahi, me huri hei tau ā-ira. Whakamahia te tātaitai hei whakaoti i ngā whakawehenga e tohua mai ana i ngā hautau.</p> <ul style="list-style-type: none"> <li>• Mō Hēnare:  <math>\frac{344}{3,467} \rightarrow 344 \div 3,467 = 0.0992212</math></li> <li>• Mō Maria:  <math>\frac{4,567}{43,890} \rightarrow 4,567 \div 43,890 = 0.1040556</math></li> </ul> <p>Ināianei, me huri ngā tau ā-ira hei ōrau. Arā, me whakarea ki te 100.</p> <ul style="list-style-type: none"> <li>• Mō Hēnare:  <math>0.0992212 \times 100 = 9.92212 = 9.9\%</math>  (whakaawhiwhia kia 1 te mati ā-ira)</li> <li>• Mō Maria:  <math>0.1040556 \times 100 = 10.40556 = 10.4\%</math>  (whakaawhiwhia kia 1 te mati ā-ira)</li> </ul> <p>Nō reira 9.9% o ngā āporo a Hēnare i pirau, 10.4% o ngā āporo a Maria. Ko te māra a Maria i kaha ake te whakawhiua, engari he āhua ūrite, kāore i tino kaha ake i tā Henare.</p>

Kia pērā anō te arataki i ngā ākonga i ētahi atu rapanga. Hei tauira:

- E rua ngā umanga hoko rare, ko AEI me IOU. E \$4,366,888 te tapeke o ngā hokonga a Umanga Rare AEI. E \$456,789 o tēnei tapeke he moni hua. E \$267,900 te tapeke o ngā hokonga a Umanga Rare IOU, ko te \$45,677 o tēnei he moni hua. Ko tēhea te umanga he kaha ake te whakaputa moni hua?
- Ka rangahaua te maha o ngā rā i heke mai te ua i te tāone o Pitomauī me te tāone o Pitomatau. E 648 ngā rā o roto i ngā rā 1,461 (4 tau) i heke te ua i Pitomauī. E 431 ngā rā o roto i ngā rā 1,095 (3 tau) i heke te ua i Pitomatau. Ko tēhea o ēnei tāone he kaha ake te heke o te ua?

## He Wehenga Hautanga

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau ki te tautuhi i ngā hautau waetahi o tētahi āhua.

### Hei whakamārama

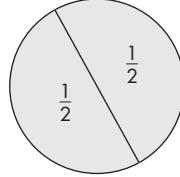
Ko te tahi te taurunga o ngā hautau waetahi katoa. Hei tauira:  $\frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \frac{1}{5}, \frac{1}{6}, \frac{1}{7}, \frac{1}{8} \dots$

He nui atu i te tahi te taurunga o ngā hautau waetahi-kore katoa. Hei tauira:  $\frac{3}{2}, \frac{2}{4}, \frac{5}{4}, \frac{6}{10}, \frac{3}{5} \dots$

### Rauemi

- Wehenga Hautau (Rauemi Tārua 4-19)

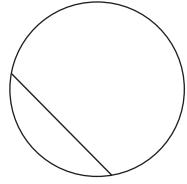
### Hei Mahi 1

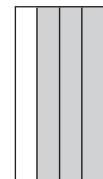
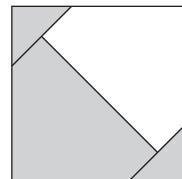
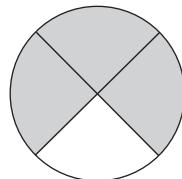
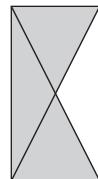
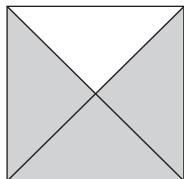
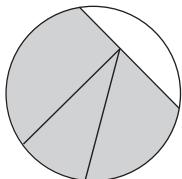
Ngā tohutohu	He tauira kōrero mā te pouako
<p>Hoatu ngā wehenga hautau ki ia ākonga, ki ia takirua ākonga rānei.</p> <p>Tonoa ngā ākonga kia kimi i ngā haurua porowhita.</p> <p>Whakamāramatia te tikanga o te tauraro me te taurunga o te hautau.</p> <p>Tonoa ngā ākonga kia tuhi pikitia o ētahi āhua, ka whakahaurua ai, kātahi ka tuhi i te tohu mō te haurua ki ia wehenga o te āhua.</p>	<p>Kimihia ētahi wehenga e rua hei hanga i te porowhita tūtahi. Kia ōrite te rahi o aua wehenga e rua.</p> <p>He aha te ingoa e tika ana mō ēnei wehenga?</p> <p>Ko te haurua.</p>  <p>E hia ngā haurua i te porowhita kotahi?</p> <p>E 2.</p> <p>E rua ngā haurua hei hanga i te porowhita tūtahi. He ōrite te rahi o ia haurua. He aha te tohu mō te haurua?</p> <p>Ko te <math>\frac{1}{2}</math>.</p> <p>Ko te '2' te tauraro o te hautau. Ko te tauraro hei tohu i te maha o ngā wehenga ōrite.</p> <p>Tuhia he porowhita (tapawhā hāngai, tapawhā rite, tapaono ...) ki ā koutou pukapuka. Hauruatia te porowhita. Tuhia te tohu mō te haurua ki ia wehenga.</p>
<p>Kia pērā anō te mahi hei whakamārama i te hauwhā, te hauwaru, te hautoru, te hauono, te haurima me te hautekau.</p>	

### Hei whakawhānui

Tonoa ngā ākonga kia tuhi pikitia hei whakaatu i ngā hautau waetahi-kore, pērā i te  $\frac{3}{4}$  te  $\frac{2}{3}$  me te  $\frac{3}{5}$  ...

### Hei Mahi 2

Ngā tohutohu	He tauira kōrero mā te pouako
Whakawhitiwhiti kōrero mō ngā wehenga ūrite-kore o tētahi porowhita.	<p>Titiro ki te pikitia nei o te porowhita:</p>  <p>E hia ngā wehenga o te porowhita? E 2.</p> <p>Nō reira he haurua ēnei wehenga? Kāore, nā te mea kāore e ūrite ana te rahi o ia wehenga. Mēnā he haurua, he ūrite te rahi o ia wehenga.</p>
Kia pērā anō te mahi hei tirotiro i ngā wehenga ūrite-kore e toru, e whā rānei o tētahi porowhita Hei tauira, tonoa ngā ākonga kia tautuhi i ngā pikitia e whakaatu ana i te $\frac{3}{4}$ :	



## Te Hautau ki te Papa Tīrau 1

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

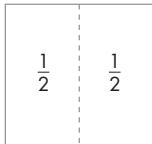
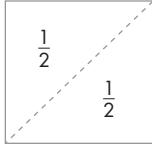
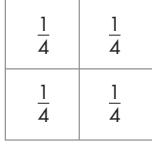
Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau ki te whakaatu hautau ki te papa tīrau.

### Rauemi

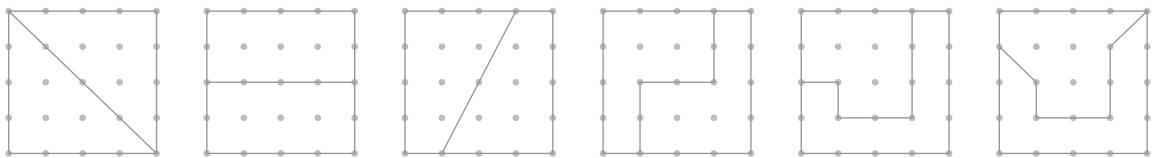
- He pepa (he tapawhā rite te āhua)
- He papa tīrau
- He hererapa
- Hautanga Papa Tīrau 1 (Rauemi Tārua 4-20)
- Hautanga Papa Tīrau 2 (Rauemi Tārua 4-37)

### Hei Mahi 1

Ngā tohutohu	He tauira kōrero mā te pouako
<p>Aratakina ngā ākonga kia whētui i te tapawhā rite hei whakaatu haurua, hauwhā, hauwaru hoki.</p> 	<p>He aha te āhua o te pepa?</p> <p>He tapawhā rite.</p> <p>He ūrite ngā tapa e whā. Whētuia kia haurua. Tuhia te tohu mō te haurua ki ia wehenga.</p>
	<p>Tikina he pepa atu anō. Kia rerekē te whētui, engari kia haurua tonu te tapawhā rite. Tuhia te tohu haurua ki ia wehenga.</p>
	<p>Whētuia anō te pepa kia hauwhā. Mārohatia te pepa. Āta tirohia mēnā he ūrite te rahi o ia hauwhā.</p> <p>Tuhia te tohu mō te hauwhā ki ia wehenga. E hia ngā hauwhā i te tapawhā rite kotahi?</p> <p>E 4.</p> <p>Whētuia anō te pepa kia hauwaru. Mārohatia te pepa. Āta tirohia mēnā he ūrite te rahi o ia hauwaru.</p> <p>Tuhia te tohu mō te hauwaru ki ia wehenga. E hia ngā hauwaru i te tapawhā rite kotahi?</p> <p>E 8.</p>
<p>Whakawhitihitī kōrero mō ngā hautau ūrite.</p>	<p>E hia ngā hauwaru i te hauwhā kotahi?</p> <p>E 2.</p> <p>Anei te whārite: <math>\frac{2}{8} = \frac{1}{4}</math></p> <p>Kimihia ētahi atu hautanga ūrite, ka tuhi ai i te whārite.</p> <p><math>\frac{4}{8} = \frac{1}{2}</math>      <math>\frac{4}{8} = \frac{2}{4}</math>      <math>\frac{2}{4} = \frac{1}{2}</math>      <math>\frac{6}{8} = \frac{3}{4}</math></p>

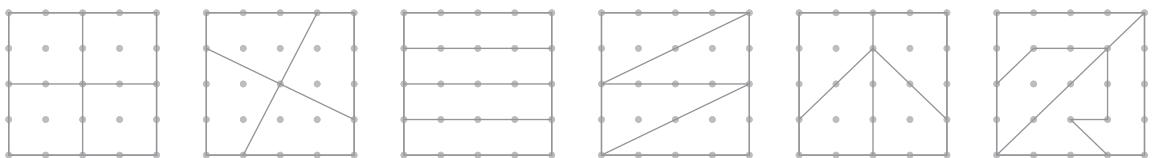
## Hei Mahi 2

Tonoa ngā ākonga kia haurua i tētahi papa tīrau. E hia ngā hauruatanga rerekē e taea ana? Ko te mea nui, kia ōrite te rahi o ia haurua. Kia oti tētahi hauruatanga ki te papa tīrau, me tuhi ki te whārangi (**Rauemi Tārua 4-20**). E whakaatu ana ēnei papa tīrau katoa i ngā wehenga haurua:



## Hei Mahi 3

Tonoa ngā ākonga kia whakaatu hauwhā ki te papa tīrau. E hia ngā hauwhātanga rerekē e taea ana? Ko te mea nui, kia ōrite te rahi o ia hauwhā. Kia oti tētahi hauwhātanga ki te papa tīrau, me tuhi ki te whārangi (**Rauemi Tārua 4-20**). E whakaatu ana ēnei papa tīrau katoa i ngā wehenga hauwhā:



## Hei Mahi 4

Tonoa ngā ākonga kia whakaatu hauwaru ki te papa tīrau. E hia ngā hauwarutanga rerekē e taea ana? Ko te mea nui, kia ōrite te rahi o ia hauwaru. Kia oti tētahi hauwarutanga ki te papa tīrau, me tuhi ki te whārangi (**Rauemi Tārua 4-20**).

### Hei whakawhānui

Hoatu he whārangi papa tīrau he tapawhā hāngai te āhua (pērā i te 8 mā te 3). Tonoa ngā ākonga kia whakaatu hautanga (pērā i te hauono) ki ēnei papa tīrau. Kei te **Rauemi Tārua 4-37** ētahi hei mahi mā ngā ākonga.

## Te Hautau ki te Papa Tīrau 2

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau ki te whakaatu hautau uaua ki te papa tīrau.

### Hei whakamārama

He āhua uaua ake te whakaatu i te  $\frac{1}{3}$ , te  $\frac{1}{5}$ , te  $\frac{1}{6}$  me te  $\frac{1}{7}$  ki te papa tīrau. Mā te whakaaro whakarea e wehea ai te papa tīrau ki ngā hautanga e hiahiatia ana.

Hei tauira, e taea ana te kotahi haurima te whiriwhiri mēnā e 5, 10, 15 rānei te rahi o te papa tīrau. Ko tā te ākonga he wehe i te rahi o te papa tīrau ki te 5.

### Rauemi

- Hautanga Papa Tīrau 1 (Rauemi Tārua 4-20)
- Hautanga Papa Tīrau 3 (Rauemi Tārua 4-38)
- He papa tīrau
- He hererapa

Ngā tohutohu	He tauira kōrero mā te pouako
<p>Aratakina ngā ākonga kia whakaatu haurima ki te papa tīrau.</p> <p>Kia hia ngā wehenga ōrite? Kia 5.</p> <p>Āe rā, kia 5 ngā wehenga, kia ōrite te rahi o ia wehenga.</p> <p>E hia katoa ngā tapawhā rite paku e whakaaturia ana ki te papa tīrau? 15.</p> <p>Nō reira e hia ngā tapawhā rite paku kei roto i te haurima kotahi? E 3.</p> <p>He aha te whārite whakarea me te whārite whakawehe e hāngai ana?  <math>3 \times 5 = 15</math>  <math>15 \div 5 = 3</math></p>	

Kia pērā anō te mahi mō ngā hautanga me ngā papa tīrau e whakaaturia ana i te Rauemi Tārua 4-38.

## Ngā Hautau Waetahi-kore

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a

E ako ana ahau ki te tautuhi, ki te hanga, ki te whakaingoa i ngā hautau waetahi-kore (arā, he nui ake te taurunga o te hautau i te kotahi).

### Rauemi

- Wehenga Hautau (Rauemi Tārua 4-19)
- Kia 10 ngā huinga kāri e whakaatu ana i ngā tau 1-6 (he mataono tau rānei)
- Wharewhare Hautau (Rauemi Tārua 4-22)
- He porotiti
- He rauata (OHP)

### Te kēmu 1: He Pātata ki te Kotahi

#### Ngā tohutohu

- He mahi takirua tēnei. Ka whai tētahi ākonga i tētahi ki te tango i ētahi kāri tau e rua, kia rua rānei ngā pīroritanga o te mataono tau.
- Ka whakamahia ngā mati e rua hei hanga i tētahi hautau. Hei tauira, mēnā ka puta te 3 me te 4, ka hangaia te  $\frac{3}{4}$ , te  $\frac{4}{3}$  rānei.
- Ka whakaaturia taua hautau ki ngā wehenga hautau (**Rauemi Tārua 4-19**).
- Ko te ākonga ka hanga i te hautau he pātata rawa ki te kotahi, ko ia te toa.

### Te kēmu 2: Wharewhare Hautau

#### Ngā tohutohu

- Hoatu he papa wharewhare hautau (**Rauemi Tārua 4-22**) ki ia ākonga.
- Hangaiā tētahi hautau ki ngā wehenga hautau, ka whakaatu ai ki te rauata.
- Mā ia ākonga e tirotiro ā rātou papa wharewhare, ā, mēnā kei reira te tohu mō te hautau e whakaaturia ana ki te rauata, ka uhia ki te porotiti.
- Ko te ākonga tuatahi kia uhi i te katoa o ngā hautau o tana papa wharewhare, ko ia te toa.

## He Pākete Rare

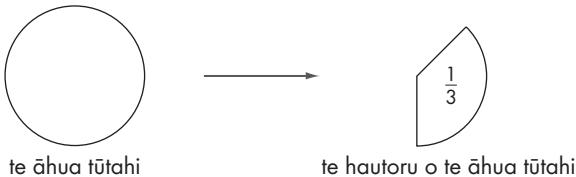
Mahere Tau | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau ki te hanga i te katoa o tētahi huinga mai i tētahi hautanga.

### Hei whakamārama

Ko tētahi mahi hautau matua, ko te whakawehi i tētahi mea hei whakaatu hautanga. E tika ana hoki kia mōhio te ākonga ki te hanga i te katoa o tētahi mea, mēnā e mōhio ana ia ki tētahi hautanga o taua mea. Hei tauira:



$$16 \text{ te huinga tūtahi} \longrightarrow 12 \text{ te } \frac{3}{4} \text{ o te huinga tūtahi}$$



$$10 \text{ te } \frac{2}{3} \text{ o te huinga tūtahi} \longrightarrow 15 \text{ te huinga tūtahi}$$

### Rauemi

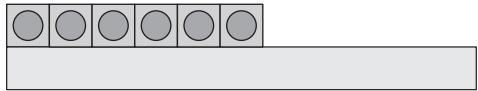
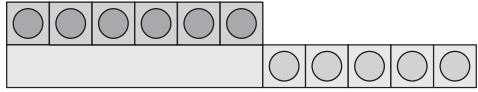
- He poraka honohono (kia rua ngā tae)
- He pepa

### Hei Mahi 1

Ngā tohutohu	He tauira kōrero mā te pouako
Whakaaturia ētahi poraka honohono e 7, kia 3 ngā mea whero, kia 4 ngā mea kahurangi.	Whakaaro hia he pākete rare tēnei. Kāore au e whāki e hia katoa ngā rare kei roto i te pākete.
 Tākaitia ngā poraka honohono kia rite ki tētahi pākete rare.	 Anei ngā rare whero e toru o roto i tēnei pākete. He kahurangi te toenga o ngā rare.
Tangohia ngā poraka whero, ka whakatakoto ai ki runga o te tākai.  Whakawhitihiti kōrero mō ngā hautanga.	He ōrite te rahi o ia rare, nō reira ki tō titiro, e hia katoa ngā rare o tētahi pākete kotahi? E 7.

	<p>Nō reira, he aha te hautanga o ngā rare whero?      Ko te <math>\frac{3}{7}</math>.</p> <p>E hia ngā rare kahurangi kei roto tonu i te pākete?      E 4.</p> <p>He aha te hautanga o ngā rare kahurangi?      Ko te <math>\frac{4}{7}</math>.</p> <p>Tāpiria te <math>\frac{3}{7}</math> me te <math>\frac{4}{7}</math>, ka hia?      Ko te <math>\frac{7}{7}</math>, arā, ko te 1.</p> <p>Me tuhi te whārite ki te papa tuhituhi.  <math>\frac{3}{7} + \frac{4}{7} = \frac{7}{7} = 1</math></p>
<p>Whakaaturia ētahi atu hautanga pākete rare, ā, kia pērā anō te wānanga e hia katoa ngā rare o te pākete.      Hei tauira, ko te <math>\frac{1}{8}</math>, te <math>\frac{4}{5}</math>, te <math>\frac{4}{6}</math>, te <math>\frac{7}{9}</math> ...</p>	

## Hei Mahi 2

Ngā tohutohu	He tauira kōrero mā te pouako
<p>Whakaaturia ētahi poraka honohono whero e ono, ka kī atu ai ki ngā ākonga koirā te ono hautekau mā tahi (<math>\frac{6}{11}</math>) o tētahi pākete rare.</p> <p>Aratakina ngā ākonga kia whakaatu i te katoa o te pākete, me te tuhi i te whārite tāpiri e hāngai ana.</p>	<p>Anei ētahi rare whero e 6. Koirā te <math>\frac{6}{11}</math> o tētahi pākete. E hia katoa ngā rare kei roto i te pākete kotahi?      11.</p> <p>Whakamāramatia mai i pēhea koe i mōhio ai.      Ko te <math>\frac{6}{11}</math> te hautanga o ngā rare whero. Ko te tikanga o te hautau e mea ana e 6 o ngā rare 11. Nō reira 11 katoa ngā rare.</p>  <p>Mēnā he kahurangi ērā atu o ngā rare, e hia ngā rare kahurangi?      E 5.</p> <p>He aha te hautanga o ngā rare kahurangi?  <math>\frac{5}{11}</math>.</p> 

Tāpiria te hautanga o ngā rare whero me te hautanga o ngā rare kahurangi.

Ko te  $\frac{11}{11}$ , arā ko te pākete kotahi.

Tuhia te whārite.

$$\frac{6}{11} + \frac{5}{11} = \frac{11}{11} = 1$$

Kia pērā anō te mahi hei whakaatu i ngā whārite pēnei i ēnei:

$$\frac{2}{9} + \frac{7}{9} = \frac{\square}{9}$$

$$\frac{5}{12} + \frac{7}{12} = \frac{\square}{12}$$

$$\frac{\square}{13} + \frac{4}{13} = \frac{13}{13}$$

...

## Te Hautanga ā-Ira

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a

E ako ana ahau ki te pānui hautau ā-ira.

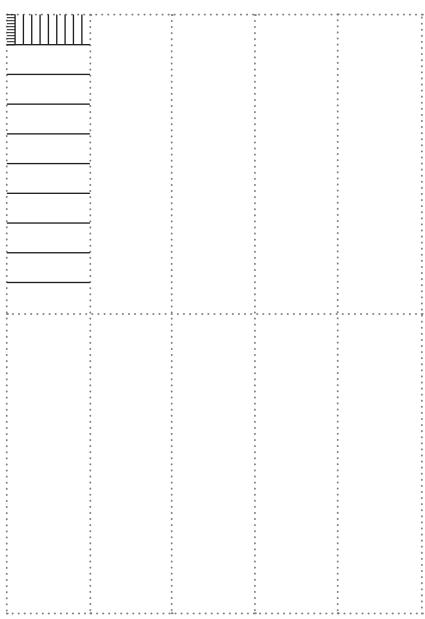
### Hei whakamārama

Ko te tūtakina tuatahi o te ākonga ki tēnei mea te ira, ko te horopaki o te moni. Ko te whakamahinga o te ira i te horopaki moni, he tohu noa iho hei wehe i ngā tāra me ngā hēneti. Ko te whakaaro o te nuinga o ngā ākonga, he tauoti ngā tāra, he tauoti hoki ngā hēneti. Nō reira mō te nuinga, kāore e whai wāhi mai ana te mātauranga hautau ki te horopaki moni. Ahakoa ka taea e te ākonga te whakaotι ngā paheko pēnei i te  $\$1.50 + \$2.50 = \$4.00$ , kāore tonu pea i te tino mārama ki ngā tikanga o te hautau ā-ira.

### Rauemi

- Papa Hautanga ā-Ira (Rauemi Tārua 4-21)
- He kutikuti

### Hei Mahi 1

Ngā tohutohu	He tauira kōrero mā te pouako
<p>Āta tirohia i te tuatahi mēnā e mōhio ana te ākonga ki te tikanga o ia mati i roto i ngā tau, tae atu ki te 999,999,999,999 (Tirohia te ngohe ‘He Whare Uara Tū’, whārangi 38).</p> <p>Whakamahia te Papa Hautanga ā-Ira hei tūhura i te hautekau me te haurau:</p> 	<p>Tapahia tētahi o ngā wehenga nui o te whārangi nei (te papa hautanga ā-ira).</p> <p>E hia o ēnei wehenga e kapi katoa ai te whārangi? 10.</p> <p>He ūrite te rahi o ēnei wehenga tekau? Āe.</p> <p>Nō reira, he aha te hautau e rite ana ki tēnei wehenga? Ko te ‘kotahi hautekau’.</p> <p>Tuhia te tohu mō te kotahi hautekau.</p> <p><math>\frac{1}{10}</math>.</p> <p>He aha te tikanga o te tauraro o te hautau? E mea ana 10 ngā wehenga katoa, he ūrite te rahi o ia wehenga.</p> <p>E hia ngā hautekau i te katoa o te papa? 10.</p> <p>Anei te whārite: <math>\frac{10}{10} = 1</math></p> <p>Tapahia tētahi o ngā wehenga iti ake.</p>

E hia o ēnei wehenga kei roto i te hautekau?

10.

Nō reira e hia hei whakakapi i te katoa o te papa?

100.

I pēhea koe i mōhio ai?

10 kei ia hautekau. 10 ngā hautekau e kapi katoa ai te whārangi, nō reira whakareatia te 10 ki te 10, ka 100.

Nō reira, he aha te hautau e hāngai ana ki tēnei wehenga?

Ko te haurau, nā te mea kotahi rau kei roto i te whārangi katoa, ā, he ūrite te rahi o ia wehenga.

He aha te tohu mō te haurau?

$\frac{1}{100}$

He aha ngā whārite e taea ana te tuhi mō te haurau?

$$\frac{100}{100} = 1$$

$$\frac{10}{100} = \frac{1}{10}$$

Kia pērā anō te whakamārama haere i te haumano me te hautekau-mano.

## Hei Mahi 2

Ngā tohutohu	He tauira kōrero mā te pouako														
<p>Tonoa ngā ākonga kia tuhi i tētahi tūtohi uara tū e whakaatu ana i ngā hautekau, ngā haurau me ngā haumano i te taha o ngā tahi me ngā tekau. Kia rahi tonu te tūtohi.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>10</td><td>1</td><td>ira</td><td><math>\frac{1}{10}</math></td><td><math>\frac{1}{100}</math></td><td><math>\frac{1}{1,000}</math></td><td><math>\frac{1}{10,000}</math></td></tr> <tr> <td></td><td></td><td>.</td><td></td><td></td><td></td><td></td></tr> </table> <p>Tonoa ngā ākonga kia whakaatu i te wehenga o te papa hautanga ā-ira e tika ana ki ia wāhi o te tūtohi.</p>	10	1	ira	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1,000}$	$\frac{1}{10,000}$			.					<p>Anei te tūtohi e whakaatu ana i ngā uara tū o ngā mati kei roto i tētahi tau. Ka tīmata ki ngā tekau. Ki te taha matau ko ngā tahi. Ki te taha matau anō ko ngā hautekau, kātahi ko ngā haurau, ngā haumano me ngā hautekau-mano.</p> <p>Tikina ngā wehenga o te papa hautanga ā-ira i tapahia i te mahi i mua, ka whakatakoto ai ki te wāhi e tika ana i te tūtohi.</p> <p>Ko hea te wāhi e tika ana mō te hautekau? Mō te haurau? ....</p> <p>Ka kīia he tauoti te 10 me te 1. He hautau te hautekau, te haurau, te haumano me te hautekau-mano. Nō reira ka tuhia he ira ki waenganui. Ko ngā tauoti ki te taha mauī o te ira, ko ngā hautau ki te taha matau.</p> <p>He aha hei whakatakoto ki te wāhi o ngā tahi? Ko tētahi papa hautanga tūtahi.</p>
10	1	ira	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1,000}$	$\frac{1}{10,000}$									
		.													

	<p>He aha hei whakatakoto ki te wāhi o ngā tekau? Kia tekau ngā papa hautanga tūtahi.</p> <p>Āta tirohia te rerekē o te rahi o te 10 me te hautekau. He tino nui ake te tekau i te hautekau.</p>
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### Hei Mahi 3

Ngā tohutohu	He tauira kōrero mā te pouako
Tuhia he tūtohi uara tū, kia 15 ngā wāhi uara tū. Tuhia te 1 ki te wāhi i waenganui, kātahi ka whakaingoa haere i ngā wāhi ki te taha mauī (ngā tauoti) me ngā wāhi ki te taha matau (ngā hautau). Tuhia te ira ki waenganui i ngā tahi me ngā hautekau.	<p>He tūtohi uara tū tēnei. Ko te wāhi o ngā tahi kei waenganui.</p> <p>He aha te wāhi ki te taha mauī o ngā tahi? Ko ngā tekau.</p> <p>He aha te wāhi ki te taha matau o ngā tahi? Ko ngā hautekau.</p> <p>He aha te wāhi ki te taha mauī o ngā tekau? Ko ngā rau.</p> <p>He aha te wāhi ki te taha matau o ngā hautekau? Ko ngā haurau.</p> <p>(Kia pērā tonu te haere kia oti te katoa o ngā wāhi te whakaingoa.)</p>

10,000,000	1,000,000	100,000	10,000	1,000	100	10	1	ira	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1,000}$	$\frac{1}{10,000}$	$\frac{1}{100,000}$	$\frac{1}{1,000,000}$	$\frac{1}{10,000,000}$
						4	5	•	7	3	2				
						9	•	5	8	2	4				

Tuhia ētahi tau ki te tūtohi, ka tono ai i ngā ākonga kia pānui i aua tau, me te whakatairite i te rahi o tēnā me tēnā.	<p>Anei tētahi tau hei tuhi atu ki te tūtohi uara tū: 45.732</p> <p>He aha te tikanga o te 4? Ko te whā tekau.</p> <p>E tohu ana te 5 i te aha? E 5 ngā tahi.</p> <p>E tohu ana te 7 i te aha? E 7 ngā hautekau.</p> <p>He aha te tikanga o te 3? E 3 ngā haurau.</p>
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	<p>Pēhea te 2?</p> <p>E 2 ngā haumano.</p> <p>Anei anō tētahi tau hei tuhi atu ki te tūtohi: 9.5824</p> <p>Whakamāramatia mai te tikanga o ia mati o tēnei tau. E 9 ngā tahi. E 5 ngā hautekau. E 8 ngā haurau. E 2 ngā haumano. E 4 ngā hautekau-mano.</p> <p>Anei te tau roha mō te 9.5824: <math>9 + \frac{5}{10} + \frac{8}{100} + \frac{2}{1,000} + \frac{4}{10,000}</math></p> <p>Me pānui tahi tātau i te tau roha. E iwa me te rima hautekau, te waru haurau, te rua haumano me te whā hautekau-mano.</p> <p>Ko tēhea te tau nui rawa atu, ko te 45.732, te 9.5824 rānei? Ko te 45.732, nā te mea e 4 ōna tekau. He iti ake i te 10 te 9.5824.</p>
Mēnā kei te raru tā te ākonga whakatairite i te rahi o ētahi tau ā-ira, me hoki ki te hanga i aua tau ki ngā wehenga o te papa hautanga ā-ira ( <b>Rauemi Tārua 4-21</b> ).	

#### Hei Mahi 4

Ngā tohutohu	He tauira kōrero mā te pouako										
Tuhia he tau ā-ira ki te tūtohi, ka whakamārama ai i te tikanga mō te pānui tau ā-ira.	<p>Anei anō tētahi tau ā-ira:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>10</td><td>1</td><td>ira</td><td><math>\frac{1}{10}</math></td><td><math>\frac{1}{100}</math></td></tr> <tr> <td>2</td><td>6</td><td>*</td><td>7</td><td>9</td></tr> </table> <p>Pānuihia mai te wāhangā tauoti i te taha mauī o te ira. Rua tekau mā ono.</p> <p>Ko te tikanga mō te pānui i te wāhangā hautau ki te taha matau o te ira, me pānui ia mati. Arā, ko te ‘ira whitu iwa’. Kaua ko te ‘ira whitu tekau mā iwa’. He aha i pēnei ai tēnei tikanga? Nā te mea kāore te 7 e tohu ana i te whitu tekau, nō reira e hē ana te kī ‘whitu tekau’. E tohu kē ana i te whitu hautekau.</p> <p>Me pēhea te pānui i te katoa o te tau? Rua tekau mā ono ira whitu iwa.</p>	10	1	ira	$\frac{1}{10}$	$\frac{1}{100}$	2	6	*	7	9
10	1	ira	$\frac{1}{10}$	$\frac{1}{100}$							
2	6	*	7	9							
Kia taunga rā anō ngā ākonga ki te pānui i ngā tau roa, pēnei i te 6,209.1472489 e whakaaturia ana ki te tūtohi uara tū, kātahi ka tuhi noa i te tau, hei aha te tūtohi.											

## Te Moni me te Hautanga ā-Ira

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau ki te hononga o te tau ā-ira me te moni.

### Hei Mahi 1

Ngā tohutohu	He tauira kōrero mā te pouako
<p>Tuhia te rapanga nei ki te papa tuhituhi, ka pānui tahi ai me ngā ākonga:</p> <p>E 5kg āporo ka hokona e Horowai, e \$6 te utu. He aha te utu ā-manokaramu?</p> <p>Tonoa ngā ākonga kia whakaoti i te wehenga <math>\\$6 \div 5</math> i te tātaitai, ka whakawhitiwhiti kōrero ai mō te tau ā-ira ka puta.</p>	<p>Anei te rapanga hei whakaoti ki te tātaitai. He aha te whārite?</p> <p>Wehea te 6 ki te 5.</p> <p>Āe rā, ka wehea te \$6 ki ngā manokaramu e 5 hei tātai i te utu ā-manokaramu. Anei te whārite: <math>\\$6 \div 5 = \square</math></p> <p>He aha te otinga ka puta ki te tātaitai?</p> <p>Ko te 1.2.</p> <p>E tohu ana te 1 i te aha?</p> <p>Ko te kotahi tāra tēnā.</p> <p>Mēnā ka wehea te \$1 kia 10 ngā wehenga ūrite, he pēhea nei te rahi o ia wehenga?</p> <p>Ko te 10 hēneti. 10 ngā 10 hēneti, ka 100 hēneti. Koia te tāra kotahi.</p> <p>Anei te whārite: <math>\frac{1}{10}</math> o te \$1 = 10 hēneti</p> <p>He ūrite te <math>\frac{1}{10}</math> ki te 0.1, nō reira ko te 0.1 o te \$1 = 10 hēneti.</p> <p>Nō reira he aha te 0.2 o te tāra?</p> <p>Ko te 20 hēneti.</p> <p>Kia hoki atu ki te otinga o te whakawehenga i te tātaitai. He aha te 1.2 hei tāra me te hēneti?</p> <p>Ko te \$1.20.</p>

Kia pērā anō te tuhi pakitau, te whakamahi tātaitai me te whakawhitiwhiti kōrero mō ēnei whakawehenga:

$\$7 \div 5 = \square$        $\$6 \div 4 = \square$        $\$4 \div 5 = \square$        $\$14 \div 4 = \square$        $\$13 \div 2 = \square$       ...

## Hei Mahi 2

Ngā tohutohu	He tauira kōrero mā te pouako
<p>Tuhia te rapanga nei ki te papa tuhituhi, ka pānui tahi ai me ngā ākonga:</p> <p>E 4kg āporo ka hokona e Horowai, e \$5 te utu. He aha te utu ā-manokaramu (kg)?</p> <p>Tonoa ngā ākonga kia whakaoti i te whakawehenga <math>\\$5 \div 4</math> i te tātaitai, ka whakawhitihitī kōrero ai mō te tau ā-ira ka puta.</p>	<p>Anei te rapanga hei whakaoti i te tātaitai. He aha te whārite? Whakawheha te 5 ki te 4. Arā te whārite <math>\\$5 \div 4 = \square</math>.</p> <p>He aha te otinga ka puta i te tātaitai? Ko te 1.25.</p> <p>Kia tuhia atu te 1.25 ki te tūtohi uara tū:</p> <p>E tohu ana te 1 i te tahi tāra. E tohu ana te 2 i te aha? I te 0.2 tāra, ko te <math>\frac{2}{10}</math> tāra rānei.</p> <p>E hia hēneti e ūrite ana ki te ira rua? Ko te 20 hēneti.</p> <p>Anei te whārite: <math>0.2 \times \\$1 = 20</math> hēneti.</p> <p>E tohu ana te 5 i te aha? I te <math>\frac{5}{100}</math> o te tāra, ko te 0.05 tāra rānei.</p> <p>E hia hēneti e ūrite ana ki te ira kore rima? Ko te 5 hēneti.</p> <p>Nō reira he aha te 1.25 hei tāra/hēneti? Ko te tahi tāra, e rua tekau mā rima hēneti.</p>
<p>Kia pērā anō te tuhi pakitau, te whakamahi tātaitai me te whakawhitihitī kōrero mō ēnei whakawehenga:</p>	$\$7 \div 4 = \square$ $\$13 \div 4 = \square$ $\$3 \div 4 = \square$ $\$14 \div 8 = \square$ $\$20 \div 16 = \square$ ...
<p><b>Hei whakawhānui</b></p> <p>Titoa he pakitau, whakamahia he tātaitai ka whakaoti ai i ngā rapanga pēnei i ēnei:</p>	$\$23 \div 16 = \square$ $\$13.89 \div 11 = \square$ $\$345.78 \div 17 = \square$ $\$290 \div 64 = \square$ $\$14,567.67 \div 32 = \square$
<p>Ko te mahi nui i ēnei rapanga, he whakaawhiwhi i te otinga ka puta i te tātaitai ki te hēneti, ki te 5 hēneti rānei e pātata ana. Ko te rārangī tau ā-ira hei āwhina i te mahi whakaawhiwhi, kia āta kitea ai te hēneti, te 5 hēneti rānei e pātata ana ki te otinga o te tātaitai.</p>	

## Te Tikanga Nui o te Kore

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a

E ako ana ahau ki te tikanga nui o te kore (0) i roto i ngā tau ā-ira.

### Hei Mahi 1

Ngā tohutohu	He tauira kōrero mā te pouako
<p>Pānuihia te kōrero nei, ka tuhi ai i ngā rārangī tau ki te papa tuhituhī:</p> <p>Ka ine a Kiwa i te roa o tētahi papa tākaro. E whakaaturia ana ia hautekau mita ki tana tēpa ine. Ka mea a Kiwa, e 56.7 mita te roa o te papa tākaro.</p> <p>He tēpa ine hoki tā Horomia. E whakaaturia ana ia haurau mita ki tana tēpa ine. Ka ine a Horomia te papa tākaro, ā, ko tāna, e 56.70 te roa.</p>	<p>Anei te tēpa ine a Kiwa. Ko te 56.6, te 56.7, me te 56.8 ngā tau e whakaaturia ana. Nō reira ko te inenga 56.7 e hāngai ana ki te takiwā mai i te 56.65 (kei waenganui i te 56.6 me te 56.7) ki te 56.75 (kei waenganui i te 56.7 me te 56.8).</p> <p><b>Te āwhata a Kiwa</b></p> <p>56.6                    56.65                    56.7                    56.75                    56.8 kei tēnei rohe te inenga tōtika</p> <p>Anei te tēpa a Horomia. Ko te 56.69, te 56.70, me te 56.71 e whakaaturia ana ki tana tēpa. Nō reira ko te inenga 56.70 e hāngai ana ki te takiwā mai i te 56.695 (kei waenganui i te 56.69 me te 56.70) ki te 56.705 (kei waenganui i te 56.70 me te 56.71).</p> <p><b>Te āwhata a Horomia</b></p> <p>56.60                    56.695                    56.70                    56.705                    56.80 kei tēnei rohe te inenga tōtika</p> <p>Nō reira ko tēhea te inenga tōtika rawa atu, ko te 56.7, ko te 56.70 rānei?</p> <p>Ko te 56.70.</p> <p>E rua ngā mati ā-ira o te 56.70, nō reira e tika ana tērā inenga ki te haurau mita e pātata ana.</p> <p>Kotahi anake te mati ā-ira o te 56.7, nō reira e tika ana tērā inenga ki te hautekau mita e pātata ana.</p>
<p>Tonoa ngā ākonga kia whakaatu i ngā inenga takirua nei ki ētahi rārangī tau, ka kōrero mai ai mō te tōtika o ngā inenga:</p> <ul style="list-style-type: none"> <li>• te 14.3m me te 14.30m</li> <li>• te 1cm me te 1.0cm</li> <li>• te 13.56kg me te 13.560kg</li> <li>• te 14.78km me te 14.780km</li> </ul>	

## Whakaawhiwhinga Whaitake

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau ki te whakaawhiwhi i te otinga o tētahi rapanga ki te tau e whaitake ana, i runga anō i te horopaki o te rapanga.

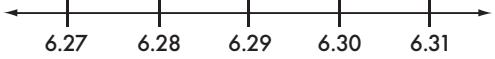
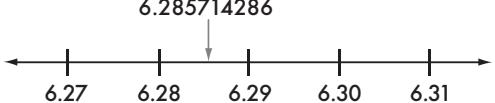
### Hei whakamārama

Ko te  $6.285714286$  te otinga o te wehenga  $44 \div 7$ . E tika ana kia whakaawhiwhia i runga i te horopaki o te rapanga. Hei tauira, mēnā e tapahia ana tētahi papa rākau e 44cm te roa kia 7 ngā wehenga ūrite, me whakaawhiwhi ki te 6.3cm. Kāore he take o ngā inenga he iti ake i te 0.1cm (1mm), nā te mea ko te mitamano te inenga iti rawa atu e kitea ana i ngā rūri.

### Rauemi

- He tātaitai
- Rārangi Tau ā-Ira Wātea 1 (Rauemi Tārua 4-24)
- Rārangi Tau ā-Ira Wātea 2 (Rauemi Tārua 4-25)

### Hei Mahi 1

Ngā tohutohu	He tauira kōrero mā te pouako
<p>Tuhia te rapanga nei ki te papa tuhituhi, ka pānui tahi ai me ngā ākonga:</p> <p>E \$44 te utu mō ētahi kēne pītīti e 7 i te hokomaha. He aha te utu mō te kēne kotahi?</p> <p>Whakawhitiwhiti kōrero mō te whakaawhiwhi i te otinga ka puta i te tātaitai.</p>	<p>He aha te whārite hei whakaoti i tēnei rapanga? Ko te whakawehe i te 44 ki te 7. Arā, <math>44 \div 7</math>.</p> <p>Whakamahia te tātaitai. He aha te otinga ka puta? Ko te <math>6.285714286</math>.</p> <p>Ko te kotahi hēneti te moni iti rawa atu mēnā kei te utua mā te kāri utu ā-hiko. Nō reira me whakaawhiwhi te otinga nei ki te hēneti e pātata ana. He aha ngā hēneti kei ia taha o te <math>6.285714286</math>? Kei waenganui i te \$6.28 me te \$6.29.</p> <p>Tuhia te 6.28 me te 6.29 ki tētahi rārangi tau:</p>  <p>Ko hea te wāhi tika hei whakanoho i te <math>6.285714286</math> ki tēnei rārangi tau? Kei waenganui i te 6.28 me te 6.29.</p> <p>Āe rā, engari he pātata atu ki te 6.28, ki te 6.29 rānei? He pātata atu ki te 6.29 nā te mea he nui ake i te 6.285.</p> 

Hoatu he rārangi tau ki ia ākonga. Tonoa rātou kia āta whakaaro i te whakaawhiwhinga whaitake mō ēnei rapanga:

- E 44 rita te rōrahi o te miraka hei tohatoha ki ētahi whānau e whitu, kia ūrite te rōrahi ka hoatu ki ia whānau. E hia te rōrahi ka hoatu ki ia whānau?
- E 44 tana te taumaha o ngā rīwai ka tukuna e Raniera ki ētahi hokomaha e whitu, he ūrite te taumaha ka tukuna ki ia hokomaha. E hia te taumaha o ngā rīwai ka tukuna ki ia hokomaha?
- E 7 ngā parehe i hokona e Manahi, e \$44 te utu. Ka utua e Manahi mā te moni pūkoro. He aha te utu ka tukuna e ia mō te parehe kotahi?
- E 44 ngā rare ka tohaina e Raki ki ētahi tamariki tokowhitu. He ūrite te whiwhinga a ia tamaiti. E hia rare te whiwhinga a ia tamaiti?
- E 44 ngā parehe hei tohatoha atu ki ētahi tāngata tokowhitu, kia ūrite te whiwhinga a tēnā me tēnā. He aha te whiwhinga a ia tangata?

#### **Hei whakawhānui**

Tuhia kia 3 ngā rapanga pakitau e hāngai ana ki ia whakawehenga e whai ake nei, engari kia rerekē te whakaawhiwhinga whaitake mō ia pakitau:

$$2,225 \div 17 \quad 4,567 \div 29 \quad 7,888 \div 11 \quad \dots$$

## Rārangi Tau ā-Ira

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

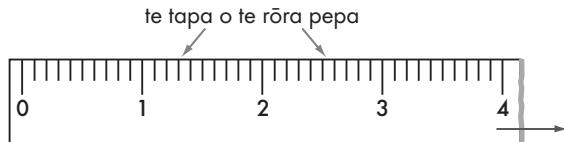
E ako ana ahau ki te whakanoho tau ā-ira ki te rārangi tau.

### Rauemi

- Kāri Tau ā-Ira (Rauemi Tārua 4-23)
- He rōra pepa roa (kia 15 mita), he rārangi peita rānei ki te papa tākaro
- He koeko, he mātiti rānei

### Ngā tohutohu

Tohua ia mita, mai i te 0 ki te 15 ki te rārangi tau. Tapaina ngā tau 0 ki te 15. Tohua ia hautekau mita, engari kaua e tapaina.



Hoatu he kāri tau ā-ira (Rauemi Tārua 4-23) ki ia ākonga, ka tono ai kia whakatauria ā rātou kāri ki ngā wāhi e tika ana i te rārangi tau. Whakamahia he koeko, he mātiti rānei hei tohu i te wāhi tika mō ia tau ā-ira.

Tīmata ki ngā kāri kotahi te mati ā-ira, pērā i te 12.5. Kātahi ko ngā kāri e rua ngā mati ā-ira, pērā i te 13.53. Kātahi ko ngā kāri e toru ngā mati ā-ira, pērā i te 0.666.

## Hautau Ōrite Huhua

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

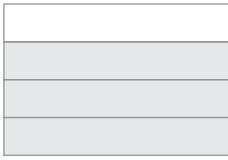
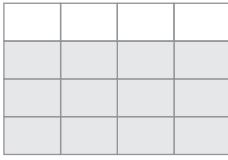
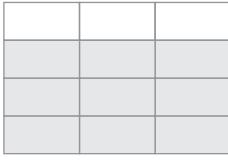
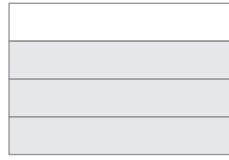
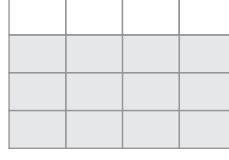
Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau ki te whiriwhiri hautau ōrite.

### Rauemi

- He pepa
- He rūri

### Hei Mahi 1

Ngā tohutohu	He tauira kōrero mā te pouako
<p>Tonoa ngā ākonga kia tuhi i tētahi tapawhā hāngai, kia 6cm mā te 4cm.</p> <p>Aratakina ngā ākonga kia whakaatu i te <math>\frac{3}{4}</math> ki te tapawhā hāngai me ūna hautau ōrite.</p>   	<p>Āta tuhia kia 6 ngā tapawhā hāngai ki tō pepa. Kia 6cm te roa, kia 4cm te whānui o ēnei tapawhā hāngai.</p> <p>Tuhia he rārangī huapae ki ēnei tapawhā hāngai katoa hei whakaatu i ngā hauwhā.</p> 
<p>Whakawhitihiti kōrero mō te tauira e kitea mai ana i ngā hautau ōrite.</p>	<p>Tuhia he rārangī poutū ki tētahi o ngā tapawhā hāngai hei whakawehi ki ētahi atu wāhangā ōrite. Kaurukutia te <math>\frac{3}{4}</math> o te tapawhā hāngai. Hei tauira:</p>  <p>E hia ngā wehenga paku o te tapawhā hāngai? 16.</p> <p>E hia o ēnei kua kaurukutia? 12.</p> <p>Nō reira e taea ana te kī kua kaurukutia te <math>\frac{12}{16}</math> o te tapawhā hāngai. He ūrite tēnei ki te <math>\frac{3}{4}</math>. Arā, <math>\frac{12}{16} = \frac{3}{4}</math>.</p> <p>Tuhia he rārangī poutū ki ērā atu o ngā tapawhā hāngai hei kimi i ētahi atu hautau ūrite mō te <math>\frac{3}{4}</math>.</p> <p>Tuhia ēnei hautau ūrite katoa: <math>\frac{3}{4} = \frac{6}{8} = \frac{9}{12} = \frac{12}{16} = \frac{15}{20} \dots</math></p>

He aha te tino tauira e kitea mai ana i ēnei hautau ūrite?  
 Ka whakareatia te  $\frac{3}{4}$  ki te  $\frac{2}{2}$ , te  $\frac{3}{3}$ , te  $\frac{4}{4}$ , haere ake nei, hei whakaputa i ngā hautau ūrite. Arā:

$$\frac{3}{4} \times \frac{2}{2} = \frac{6}{8}$$

$$\frac{3}{4} \times \frac{3}{3} = \frac{9}{12}$$

$$\frac{3}{4} \times \frac{4}{4} = \frac{12}{16}$$

$$\frac{3}{4} \times \frac{5}{5} = \frac{15}{20}$$

...

Titiro ki te hautau ūrite tautahi:  $\frac{3}{4} \times \frac{2}{2} = \frac{6}{8}$

Pēhea nei te rahi o te  $\frac{2}{2}$ ?

Ko te rua haurua, he ūrite tērā ki te tahī. Arā,  $\frac{2}{2} = 1$ .

Mēnā ka whakareatia tētahi tau ki te tahī, he aha te otinga?

Ko taua tau tonu te otinga. Hei tauira:

$6 \times 1 = 6$ ,  $232 \times 1 = 232$ ,  $6.4 \times 1 = 6.4$ .

Nō reira ki te whakareatia te  $\frac{3}{4}$  ki te  $\frac{2}{2}$ , he ūrite tērā ki te whakareatanga  $\frac{3}{4} \times 1$ . Ko te otinga he ūrite tonu ki te  $\frac{3}{4}$ . Arā,  $\frac{3}{4} = \frac{6}{8}$ .

Tonoa ngā ākonga kia whakamahi i te tauira o te hautau ūrite hei whakaoti i ēnei:

$$\frac{3}{4} = \frac{6}{8} = \frac{9}{12} = \frac{12}{16} = \frac{15}{20} = \frac{\square}{24} = \frac{21}{\square} = \frac{\square}{32} \dots$$

$$\frac{3}{4} = \frac{\square}{80} \dots$$

$$\frac{3}{4} = \frac{300}{\square} \dots$$

## Hei Mahi 2

Kia pērā anō te mahi hei kimi i ngā hautau ūrite mō te  $\frac{2}{3}$ .



## Wāhanga 4

# Te Whakarōpū me te Uara Tū



Kia mōhiotia ai: Kei te Wāhanga 3 ētahi atu ngohe e hāngai ana ki te uara tū o ngā hautanga ā-ira.

## Takirima

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau ki te whakamahi i ngā rōpū o te rima.

### Hei whakamārama

He mea nui kia kite wawe ngā ākonga i ngā tauira o te rima i roto i ngā tau 1-10. Kia maha, kia matatini tonu ngā rauemi me ngā horopaki hei whakaū i tēnei mātauranga.

### Rauemi

- He anga pirepire
- Ngaku Pī Huripoki (Rauemi Tārua 4-5)
- Tāpiria te Rima (Rauemi Tārua 5-9)
- He mataono tau, ko ngā tau 0 ki te 5 ki ngā mata
- He porotiti

### Hei Mahi 1

Ngā tohutohu	He tauira kōrero mā te pouako
Aratakina ngā ākonga kia whakamahi i ō rātou matimati ki te whakaatu i ngā tau 0-10. E whāia ana kia kaua ngā ākonga e hoki ki te 0 ki te tatau i ngā matimati, engari me whakamahi ko te 5 hei rōpū matua.	Whakaaturia mai kia 1 te matimati. Kia 2. Kia 5 ngā matimati ki te ringaringa kotahi.  Whakaaturia kia 10 ngā matimati. E hia ngā 5 kei roto i te 10? E 2 ngā 5. E 5 ngā matimati ki ia ringaringa, 10 katoa ngā matimati.  Whakaaturia kia 5 ngā matimati ki tētahi ringaringa. Whakaaturia kia 6. He aha tō mahi hei whakaatu i ngā matimati e 6? E 5 ngā matimati ki tēnei ringaringa, nō reira kotahi atu anō ki tēnei, ka 6.  Whakaaturia mai kia 7. He aha te mahi? E 5 ki tēnei ringaringa, e 2 atu anō ka 7.
	Whakaaturia kia 5 ngā matimati ki tētahi ringaringa. Ināianei, whakaaturia kia 4. He aha tō mahi? Tangohia tētahi o ngā matimati.
	Whakaaturia kia 10 ngā matimati. Ināianei, whakaaturia kia 9. He aha tō mahi? Tangohia tētahi o ngā matimati.
Kia pērā anō ngā mahi, engari me huna ngā ringaringa ki muri i te tuara. Ko tā ngā ākonga he whakaahua i ngā matimati ki ō rātou hinengaro.	

## Hei Mahi 2

Ngā tohutohu	He tauira kōrero mā te pouako
Whakamahia te rauemi ‘Ngaku Pī Huripoki’ (Rauemi Tārua 4-5) hei hanga i ngā tauhono me te 5, tae atu ki te 10.	<p>Titiro ki tēnei kāri. E rima ngā pī e kitea mai ana. Kei muri o te kāri ētahi atu pī. E 8 katoa ngā pī. E hia ngā pī kei muri o te kāri nei?</p> <p>E 3. E 5 e kitea mai ana ki mua o te kāri, e 3 atu anō kei muri e huna ana kia 8 katoa ngā pī.</p> <p>Whakaaturia te 8 ki ō matimati. Whakamahia ngā matimati katoa o tētahi ringaringa. E hia atu anō ngā matimati i te ringaringa tuarua?</p> <p>E 3.</p> <p>E 5 me te 3, ka 8.</p>
Kia pērā anō te mahi mō ngā kāri ‘Ngaku Pī Huripoki’ katoa, mai i te 5 ki te 10.	

## Hei Mahi 3

Ngā tohutohu	He tauira kōrero mā te pouako
Whakamahia te anga pirepire hei tirotiro i ngā rōpū o te 5.  Hei tauira, nukua kia 6 ngā pirepire ki te taha, ka whakawhitihiti kōrero ai mō te rōpū o te 5.  Tonoa ngā ākonga kia whakatauira i ngā pirepire ki ō rātou matimati.	<p>Kaua e tatau i ngā pirepire, engari kōrero mai ki ahau, e hia ngā pirepire kua nukua ki te taha?</p> <p>E 6.</p> <p>He aha tātou i mōhio ai mēnā kāore e tatauria?</p> <p>E 5 ki tēnā rōpū, kotahi atu anō, ka 6.</p> <p>Whakaaturia kia 6 ngā matimati ki ō ringaringa. Whakamahia ngā matimati katoa o tētahi ringaringa. E hia ngā matimati hei whakaatu ki te ringaringa tuarua?</p> <p>Kotahi. E 5 ki tētahi, kotahi atu anō, ka 6.</p>
Kia pērā anō ngā mahi mō ngā tau katoa, tae atu ki te 10.	

## Hei Mahi 4

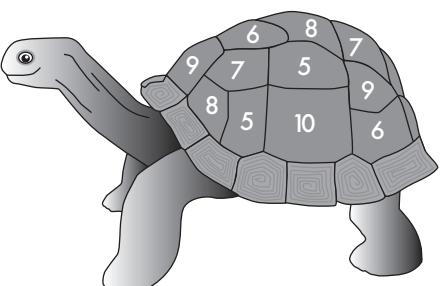
Ngā tohutohu	He tauira kōrero mā te pouako
Whakamahia te anga pirepire anō hei tirotiro i ngā rōpū o te 5.  Hei tauira, nukua kia 5 ngā pirepire ki te taha, ka tāpiri anō ai i ētahi kia 7.	<p>Anei ngā pirepire e 5. E hia atu anō kia 7?</p> <p>E 2.</p> <p>Tīmata ki te 5, ka tatau ake, 6, 7. E 5, tāpiria te 2, ka 7 katoa ngā pirepire.</p>

Tonoa ngā ākonga kia whakatauira i ngā pirepire ki ō rātou matimati.	Whakaaturia kia 7 ngā matimati ki ō ringaringa. Whakamahia ngā matimati katoa o tētahi ringaringa. E hia ngā matimati hei whakaatu ki te ringaringa tuarua? E 2. E 5 ki tētahi ringaringa, e 2 atu anō ka 7.
Kia pērā anō ngā mahi mō ētahi atu tau, tae atu ki te 10.	

### Hei Mahi 5

Ngā tohutohu	He tauira kōrero mā te pouako
<p>Whakamahia te anga pirepire hei tirotiro i ngā tauhono o roto i te 10.</p> <p>Hei tauira, nukua kia 8 ngā pirepire ki te taha, ka whiriwhiri ai e hia atu anō kia 10.</p> <p>Tonoa ngā ākonga kia whakatauira i ngā pirepire ki ō rātou matimati.</p>	<p>E hia ngā pirepire kua nukua ki te taha? E 8.</p> <p>He aha koe i mōhio ai? Tīmata i te 5, ka tatau ake, 6, 7, 8.</p> <p>E hia atu anō kia 10? E 2.</p> <p>Tīmata i te 8, ka tatau ake: 9, 10. E 2 i tāpiria atu ki te 8 kia 10.</p> <p>Whakaaturia kia 8 ngā matimati ki ō ringaringa. Whakamahia ngā matimati katoa o tētahi ringaringa. E hia atu anō kia 10? E 2.</p>

### Hei Mahi 6

He pai te kēmu ‘Tāpiria te Rima’ ( <b>Rauemi Tārua 5-9</b> ) hei whakaū i te mātauranga e pā ana ki ngā tauhono me te 5.
<p>He mahi takirua tēnei kēmu. Hoatu tētahi papa tākaro honu ki ia ākonga. Ka whai tētahi ākonga i tētahi ki te pīrori i te mataono tau (ko ngā tau 0–5 ki ngā mata). Ka tāpiria te 5 ki te tau ka puta ki te mataono tau, ā, koirā te tau ka uhia ki te porotiti i te tinana o te honu. Ka toa te ākonga tuatahi ki te uhi i ngā tau katoa i tana honu.</p> 

## Anga Pirepire

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau ki te tautuhi i ngā rōpū o te 10 me te 1.

### Rauemi

- He anga pirepire

### Hei Mahi 1

Ngā tohutohu	He tauira kōrero mā te pouako
<p>Whakaritea te anga pirepire hei whakaatu i tētahi tau ngahuru (pērā i te 60), engari kaua e whākina atu ki ngā ākonga.</p> <p>Whakaaturia te anga pirepire mō te wā poto noa iho, ka pātai atu he aha te tau e whakaaturia ana (arā, e hia ngā pirepire kua nukua ki te taha).</p> <p>E whāia ana kia kaua ngā ākonga e tatau i ngā tekau (10, 20, 30 ... 60), engari kia mōhio wawe ki te maha o ngā rārangī (e 6), me te hono anō o tēnā ki te tau ngahuru (60).</p>	<p>Kua whakaaturia tētahi tau ki te anga pirepire. He wā poto noa iho hei tirotiro mā koutou, ka kī mai ai he aha te tau e whakaaturia ana. He tau ngahuru te tau, arā, tētahi tau pēnei i te 10, te 20, te 30.</p> <p>He aha tēnei tau? Ko te 60.</p> <p>I pēhea koutou i mōhio ai? E 6 ngā rārangī pirepire kua nukua ki te taha. E 6 ngā tekau, ko te 60 tēnā.</p>

### Hei Mahi 2

Kia pērā anō te mahi, engari me whakaatu tētahi tau matirua e whai tahi ana, pērā i te 68. Tonoa ngā ākonga kia kōrero mai i te tau e whakaaturia ana, engari kaua e tuku i te wā roa kia taea e rātou te tatau.

Tonoa ngā ākonga kia whakamārama i ngā rōpū o roto i te tau. Hei tauira, e 6 ngā rōpū o te 10, kotahi te rōpū o te 5, me te 3 atu anō kei roto i te 68 ( $68 = 6 \times 10 + 5 + 3$ ).

## He Tau Matirua

Mahere Tau	0	1	2	3	4	5	6	7	8
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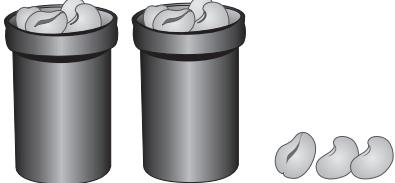
Whanaketanga	1a	1e	2a	2e	3a	3e	4a	4e	5a
--------------	----	----	----	----	----	----	----	----	----

E ako ana ahau ki te whakaatu tau mati-2 ki ngā rauemi uara tū.

### Rauemi

- He taonga takitahi, pērā i te rākau ahiporaka
- He rauemi uara tū, pērā i ngā pīni me ngā ipu
- He kāri tohutau 0–9 (Rauemi Tārua 4-1)
- Tau Matirua (Rauemi Tārua 4-32)

### Hei Mahi 1

Ngā tohutohu	He tauira kōrero mā te pouako
<p>Hoatu he kapunga taonga ki ia ākonga, ka tono ai kia whakaritea ngā rōpū o te 10.</p> <p>Whakawhitihiti kōrero mō te maha o ngā rōpū o te tekau me te maha o ngā taonga. Kaua ngā ākonga e tatau i ngā taonga takitahi, engari ko ngā rōpū o te 10 me ngā mea takitahi e toe mai ana.</p> <p>Tonoa hoki ngā ākonga kia tuhi i te tau, ka whakawhitihiti kōrero ai mō te tikanga o ia mati.</p>	<p>Anei ētahi pīni. Whakaritea ngā rōpū o te tekau, ka rau atu ai ki rō ipu, kia 10 ki ia ipu.</p>  <p>E hia katoa ngā rōpū o te 10?</p> <p>E hia atu anō ngā pīni takitahi e toe mai ana?</p> <p>Nō reira e hia katoa ngā pīni?</p> <p>Tuhia te tau ki te papa tuhituhi. He aha te tikanga o te mati tuatahi (te mea kei te taha mauī)?</p> <p>Koia hei tohu i te maha o ngā rōpū o te 10. Ko te mati tuarua hei tohu i te maha o ngā pīni takitahi.</p>

### Hei Mahi 2

Ngā tohutohu	He tauira kōrero mā te pouako
<p>Tuhia tētahi tau mati-2 ki te papa tuhituhi, ka tono ai i ngā ākonga kia whakaatu i taua tau ki ngā rauemi uara tū.</p> <p>Pātaihia atu e hia ngā rōpū o te 10, e hia hoki ngā mea takitahi.</p>	<p>Whakaaturia mai ngā pīni e 37. Whakaritea ngā rōpū o te 10.</p> <p>E hia ngā rōpū o te 10?</p> <p>E 3.</p> <p>E hia atu anō ngā pīni takitahi?</p> <p>E 7.</p>

## Hei Mahi 3

Tākarohia te kēmu ‘Tau Matirua’.

### Rauemi

- Ngā whārangi e whakaatu ana i ngā paiherenga rākau (Rauemi Tārua 4-32).
- He kāri tohutau 0–9 (Rauemi Tārua 4-1).

### Ngā tohutohu

- He kēmu mā te rōpū tokowhā, iti ake rānei.
- Hoatu he papa tākaro (**Rauemi Tārua 4-32**) e whakaatu ana i ngā paiherenga rākau ki ia ākonga.
- Riwihiriwhia ngā kāri mati (**Rauemi Tārua 4-1**, kāri 0–9) ka whakaputu ai ki te tēpu, ko ngā mata ki raro.
- Ka whai tētahi tamaiti i tētahi ki te tango matapōkere i tētahi kāri mati.
- Mēnā e taea ana, ka tuhia te mati o taua kāri ki tētahi o ngā pouaka ki te taha o ngā rākau i tana papa tākaro, hei whakaatu i te maha o ngā rōpū rākau o te 10, i te maha rānei o ngā rākau takitahi. Kātahi ka whakahoki i te kāri.
- Ki te kore e taea taua mati te tuhi, ka whakahokia te kāri.
- Ka toa te tamaiti tuatahi ki te whakakī i ngā wāhi katoa o tana papa tākaro ki ngā mati tika.

## E Pātata ana ki te 100

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

Whanaketanga	1a	1e	2a	2e	3a	3e	4a	4e	5a
--------------	----	----	----	----	----	----	----	----	----

E ako ana ahau ki te whakamahi i taku mātauranga uara tū.

### Rauemi

- He pepa
- He mataono tau
- He rauemi uara tū

### Te kēmu

Mā ia ākonga e tuhi tētahi tūtohi uara tū e whakaatu ana i ngā tekau me ngā tahi. Kia 7 ngā kapa o te tūtohi: →

tekau	tahi

### Ngā tohutohu

- Kia 7 ngā pīroritanga o te mataono tau mā ia ākonga, ā, ka tuhia ngā tau ka puta ki ā rātou tūtohi. Me āta whakaaro e te ākonga mēnā ka tuhia ki te wāhi o ngā tekau, ki te wāhi rānei o ngā tahi.
- Ko te whāinga o te kēmu kia tino pātata te tapeke o ngā tau e 7 ki te 100. E pai ana mēnā ka eke ki tua atu o te 100, engari ko te ākonga e tino pātata ana, ko ia te toa.

### Hei whakawhānui

Whakarerekēngia te kēmu kia whai wāhi mai ngā tau nui me ngā tau ā-ira. Hei tauira:

1. Kia pātata ki te 1,000:

Kia 10 ngā pīroritanga, ko ngā rau, ngā tekau me ngā tahi ngā uara tū o te tūtohi.

2. Kia pātata ki te 10:

Kia 10 ngā pīroritanga, ko ngā tahi, ngā hautekau me ngā haurau ngā uara tū o te tūtohi.

3. Kia pātata ki te 1:

Kia 10 ngā pīroritanga, ko ngā hautekau, ngā haurau me ngā haumano ngā uara tū o te tūtohi.

## Piki ake, Heke iho

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau i ngā tikanga o te uara tū e hāngai ana ki te tatau ā-tahi, ā-tekau, ā-rau, whakamua, whakamuri hoki.

### Rauemi

- Kāri Tohutau Nui (Rauemi Tārua 4-3)

### Hei Mahi 1

Ngā tohutohu	He tauira kōrero mā te pouako
<p>Whakamahia ngā kāri tohutau, ānō nei he ine-tawhiti o roto i tētahi motukā.</p> <p>Whakawhitiwhiti kōrero mō te piki ake o te tau ki te uara tū o runga ake, arā, te whakawhiti atu i te 9 ki te 10, atu i te 99 ki te 100.</p>	<p>Kei roto i ō tātou motukā tētahi āwhata hei whakaatu i te tawhiti o te haere. I te tīmatanga o te haere, ka whakaritea te āwhata nei kia whakaaturia te kore. E whā ngā mati hei whakaatu i ngā tahi manomita, ngā tekau manomita, ngā rau manomita me ngā mano manomita. Nō reira i te tīmatanga o tētahi haere, e whā ngā kore:</p> <p style="text-align: center;"><input type="text"/> 0   <input type="text"/> 0   <input type="text"/> 0   <input type="text"/> 0</p> <p>E tohu ana ngā kore e whā i te aha?</p> <p>Kāore anō kia oti tētahi manomita te haere. Kāore anō kia tīmata te haere. Ko te kore manomita te tawhiti o te haere i tēnei wā.</p> <p>Ka neke te motukā, ka tatau haere i ngā manomita (km) ka oti. Ka tae atu ki te 9 manomita, he pēnei ngā mati:</p> <p style="text-align: center;"><input type="text"/> 0   <input type="text"/> 0   <input type="text"/> 0   <input type="text"/> 9</p> <p>Kotahi atu anō te manomita, ka pēhea ngā mati?</p> <p>Ka piki ake ki te uara tū o ngā tekau. Kotahi te tekau, ā, ka hoki ki te kore te uara tū o ngā tahi.</p> <p style="text-align: center;"><input type="text"/> 0   <input type="text"/> 0   <input type="text"/> 1   <input type="text"/> 0</p> <p>E tohu ana ngā mati nei i te aha?</p> <p>Ko te maha o ngā manomita kua oti te haere, arā, kua 10km te tawhiti.</p>
<p>Kia pērā anō te arataki i ngā ākonga ki te whakaaro i te huri o ngā mati:</p> <ul style="list-style-type: none"> <li>• 10 te pikinga ake i te 93</li> <li>10 te pikinga ake i te 94</li> <li>10 te pikinga ake i te 99</li> </ul>	

- 1 te pikinga ake i te 99  
10 te pikinga ake i te 99  
100 te pikinga ake i te 99
- 1 te pikinga ake i te 899  
10 te pikinga ake i te 899  
100 te pikinga ake i te 899
- 1 te pikinga ake i te 999  
10 te pikinga ake i te 999  
100 te pikinga ake i te 999

## Hei Mahi 2

Kia pērā anō te mahi mō te hekenga iho i tētahi uara tū, arā, te tango i te 1, te 10 me te 100 i tētahi tau. Hei tauira, whakamāramatia mai te huri o ngā mati:

- 1 te hekenga iho i te 1,000  
10 te hekenga iho i te 1,000  
100 te hekenga iho i te 1,000
- 1 te hekenga iho i te 3,000  
10 te hekenga iho i te 3,000  
100 te hekenga iho i te 3,000
- 1 te hekenga iho i te 309  
10 te hekenga iho i te 309  
100 te hekenga iho i te 309

## Hei whakawhānui 1

Kia pērā tonu ngā mahi mō ētahi tau nui. Hei tauira:

- 1 te pikinga ake i te 99,999  
10 te pikinga ake i te 99,999  
100 te pikinga ake i te 99,999  
1,000 te pikinga ake i te 99,999  
10,000 te pikinga ake i te 99,999
- 1 te pikinga ake i te 99,989  
10 te pikinga ake i te 99,989  
100 te pikinga ake i te 99,989  
1,000 te pikinga ake i te 99,989  
10,000 te pikinga ake i te 99,989
- 1 te pikinga ake i te 109,990  
10 te pikinga ake i te 109,990  
100 te pikinga ake i te 109,990  
1,000 te pikinga ake i te 109,990  
10,000 te pikinga ake i te 109,990

- 1 te hekenga iho i te 309,000  
10 te hekenga iho i te 309,000  
100 te hekenga iho i te 309,000  
1,000 te hekenga iho i te 309,000  
10,000 te hekenga iho i te 309,000

### Hei whakawhānui 2

Kia pērā anō te tirotiro i te huri o ngā tau ā-ira, ina tāpiria te 1, te 0.1, te 0.01 te 0.001 rānei. Hei tauira:

- tāpiria te 1 ki te 99.999  
tāpiria te 0.1 ki te 99.999  
tāpiria te 0.01 ki te 99.999  
tāpiria te 0.001 ki te 99.999
- tangohia te 10 i te 309.000  
tangohia te 1 i te 309.000  
tangohia te 0.1 i te 309.000  
tangohia te 0.01 i te 309.000  
tangohia te 0.001 i te 309.000

### Hei whakawhānui 3

Whakaotia ēnei rapanga, kātahi ka whakamahi i te tātaitai hei tirotiro i te tika o ngā otinga:

- $395 + \square = 405$
- $36,099 - \square = 34,100$
- $99,962 + \square = 100,062$
- $\square - 99,999 = 1,000$
- $\square + 9,900 = 10,000$
- $100,000 - \square = 90,000$
- ...

## Whiriwhiria te Tau

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau ki te whakamahi i te whakaaro arorau hei whakaoti rapanga e whai wāhi mai ana te uara tū.

### Rauemi

- He papa tuhituhi

### Ngā tohutohu

Tuhia te tūtohi nei ki te papa tuhituhi: →

Tonoa tētahi ākonga kia whakaaro i tētahi tau mati-4. Kaua ia e whāki atu ki te akomanga, engari me tuhi huna te tau ki tētahi pepa. Ko tā te akomanga he karanga i tētahi tau mati-4. Ka tuhia e te ākonga tēnei tau mati-4 ki te tūtohi, me tētahi tohu ki te taha o ia mati.

Koia nei ngā tohu hei tuhi mā te ākonga (me tuhi pea ēnei whakamārama ki te papa tuhituhi kia kitea e te katoa:

- ✗ ✗ Kei te hē te mati, kei te hē hoki te wāhi uara tū o te mati.
- ✓ ✗ Kei te tika te mati, engari kei te hē te wāhi uara tū.
- ✓ ✓ Kei te tika te mati, kei te tika hoki te wāhi uara tū.

Hei tauira:

Ko te 3,567 te tau ka whakaarohia e te ākonga.

Ka karangahia e tētahi ko te 9,637. Kia pēnei te tuhia ki te tūtohi:

mano	rau	tekau	tahi

mano	rau	tekau	tahi
9	6	3	7
✗ ✗	✓ ✗	✓ ✗	✓ ✓

Ka āta whakaarohia ngā tohu i te taha o ia mati, kātahi pea ka karangahia ko te 6,327. Ka pēnei te whakaatu i te karangatanga tuarua ki te tūtohi.

Kia pēnei te haere o te kēmu kia tuhia te tau tika ki te tūtohi. He pai hoki tēnei kēmu hei mahi takirua mā ngā ākonga.

mano	rau	tekau	tahi
9	6	3	7
✗ ✗	✓ ✗	✓ ✗	✓ ✓
6	3	2	7
✓ ✗	✓ ✗	✗ ✗	✓ ✓

## Huria te Tau

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau i te tikanga o ngā mati i te uara tū o ngā mano, o ngā rau, o ngā tekau, o ngā tahi, o ngā hautekau, me ngā haurau.

### Rauemi

- He tātaitai

### Hei Mahi 1

Ngā tohutohu	He tauira kōrero mā te pouako								
<p>Tonoa ngā ākonga kia whakauru i tētahi tau ki ā rātou tātaitai. Hei tauira, ko te 67.</p> <p>Tonoa ngā ākonga kia huri i taua tau ki tētahi atu tau mā te whakauru i te tāpiritanga kotahi, te tangohanga kotahi rānei.</p>	<p>Whakaurua te 67 ki ā koutou tātaitai.</p> <p>Whakaurua tētahi tāpiritanga hei huri i te tau ki te 97. He aha te tāpiritanga? Tāpiria te 30.</p> <p>He aha te tangohanga e huri ai te 67 ki te 7? Tangohia te 60.</p>								
<p>Kia pērā anō te mahi hei huri i ēnei tau:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 25%;">45 → 75</td> <td style="width: 25%;">56 → 50</td> <td style="width: 25%;">40 → 100</td> <td style="width: 25%;">66 → 23</td> </tr> <tr> <td>168 → 108</td> <td>2,034 → 1,934</td> <td>...</td> <td></td> </tr> </table>	45 → 75	56 → 50	40 → 100	66 → 23	168 → 108	2,034 → 1,934	...		
45 → 75	56 → 50	40 → 100	66 → 23						
168 → 108	2,034 → 1,934	...							

### Hei whakawhānui 1

He uua ake ēnei:

5,678 → 5,168	4,444 → 4,114	5,678 → 5,600	678 → 621
1.32 → 1.02	1.32 → 1.29	3.427 → 3.024	

### Hei whakawhānui 2

Tonoa ngā ākonga kia kimi i te maha rawa atu o ngā paheko e taea ana hei huri i tētahi tau ki tētahi atu.

Hei tauira: He aha ētahi paheko hei huri i te 20 ki te 40?

Ko ētahi: +20      ÷ 0.5      +100%      ×2      -20

Hei tauira atu anō: He aha ētahi paheko hei huri i ēnei tau?

15 → 30	0.5 → 2	100 → 10	1,000 → 1
0.56 → 560	...		

## Whakawhitia ngā Paparanga Uara Tū

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

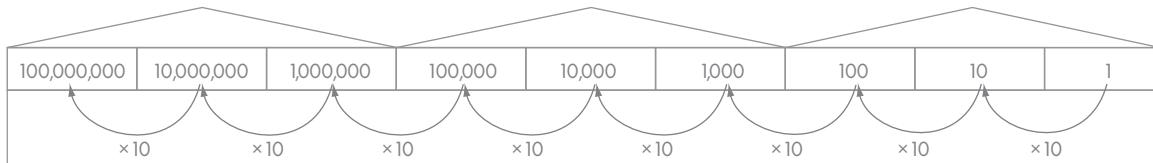
E ako ana ahau ki te whakarea i tētahi tau ki te 10, ki te 100, ki tētahi atu taupū rānei o te 10.

### Hei whakamārama

Koia nei ētahi tikanga matua o te uara tū:

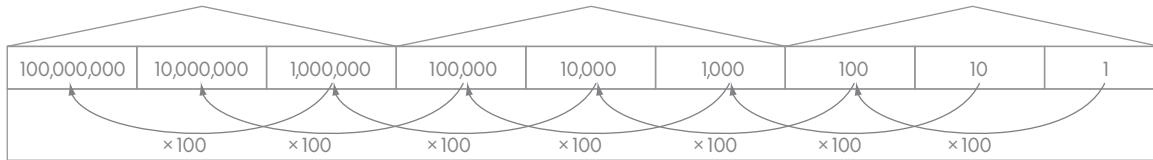
- He ūrite te tekau o tētahi uara tū ki te kotahi o te uara tū ki te taha mauī.

Hei tauira:  $10 = 1 \times 10$ ,  $100 = 10 \times 10$ ,  $1,000 = 100 \times 10 \dots$



- He ūrite te kotahi rau o tētahi uara tū ki te kotahi o te uara tū e rua ngā wāhi ki te taha mauī.

Hei tauira:  $100 = 1 \times 100$ ,  $1,000 = 10 \times 100$ ,  $10,000 = 100 \times 100 \dots$



### Rauemi

- He moni tākaro, tae atu ki te \$10,000 (Rauemi Tārua 4-9)

### Hei Mahi 1

Ngā tohutohu	He tauira kōrero mā te pouako
<p>Tuhia te rapanga nei ki te papa tuhutuhi, ka pānui tahi ai me ngā ākonga:</p> <p>Kei te haere te akomanga o Whaea Mihi ki te papa kararehe. \$10 te utu mā ia tamaiti. \$180 te tapeke o te moni kua kohia mai e Whaea Mihi. Tokohia ngā ākonga i utu i te \$10?</p> <p>Hoatu he moni tākaro ki ngā ākonga, ka arataki i a rātou ki te whiriwhiri i te rapanga nei.</p>	<p>Anei te \$100 me ētahi \$10 e 8. E hia te tapeke o te moni? \$180 te tapeke.</p> <p>Wehea te \$100 nei ki ngā \$10. E hia ngā \$10 kei roto i te \$100?</p> <p>10.</p> <p>Nō reira e hia katoa ngā \$10 kei roto i te \$180?</p> <p>10 me te 8, ka 18.</p> <p>Nō reira 18 ngā ākonga i utu i te \$10.</p> <p>He aha te whārite hei whakaata i tēnei mahi?</p> <p><math>180 = 10 \times 18</math>.</p>

Kia pērā anō te whiriwhiri i te maha o ngā \$10 kei roto i ēnei pūtea:

\$230

\$140

\$200

\$160

...

Ina taunga haere ngā ākonga ki tēnei mahi, tērā tonu pea ka kitea te otinga o ēnei rapanga i mua i te whakamahinga o te moni.

## Hei Mahi 2

Ngā tohutohu	He tauira kōrero mā te pouako
<p>Kia pērā anō te mahi, engari kia nui ake ngā tau.</p> <p>He uaua, he roa tonu te whakamahi rauemi (pērā i te moni tākaro) ki te whiriwhiri i ēnei rapanga mēnā he tau nui. Nō reira me arataki ngā ākonga kia mārama ai rātou ki tēnei tikanga o te uara tū.</p>	<p>E hia ngā \$10 kei roto i te \$980?</p> <p>He mahi nui ki te whakamahi i ngā moni tākaro. Nō reira he pai ake kia āta whakaaro i tētahi atu rautaki.</p> <p><u>Rautaki 1</u></p> <p>E hia ngā \$10 kei roto i te \$100?</p> <p>10.</p> <p>Nō reira e hia kei roto i te \$900?</p> <p>E 90.</p> <p>E hia atu anō ngā \$10 kia eke ki te \$980?</p> <p>E 8 atu anō.</p> <p>Hui katoa, ka hia ngā \$10?</p> <p>Hui katoa, e 98 ngā \$10 kei roto i te \$980.</p> <p><u>Rautaki 2</u></p> <p>Āta tirohia ngā rapanga kua oti kē te whiriwhiri i mua. He aha te tauira e kitea ana?</p> <p><math>230 = 10 \times 23</math></p> <p><math>140 = 10 \times 14</math></p> <p><math>200 = 10 \times 20</math></p> <p><math>160 = 10 \times 16</math></p> <p>...</p> <p>Ko tā te tauira, he whakakore noa atu i te mati 'kore' i te uara tū o ngā tahi, ā, ka hua ko te maha o ngā 10.</p> <p>Nō reira he aha te whārite hei whakaata i tēnei rapanga?</p> <p><math>980 = 10 \times 98</math>.</p>

Kia pērā anō te whiriwhiri i te maha o ngā 10 kei roto i ēnei tau:

860

900

340

660

...

### Hei Mahi 3

Ngā tohutohu	He tauira kōrero mā te pouako														
<p>Huri kōarotia tēnei mahi. Arā, ka whakawhitiwhiti kōrero mō te whakarea i te 10 ki tētahi tau. Hei tauira:</p> <p><math>10 \times 25 = \square</math></p>	<p>E 25 ngā \$10 i kohia mai e Whaea Mihi. E hia katoa ngā moni i kohia mai e ia?</p> <p>He aha ētahi rautaki hei whiriwhiri i tēnei rapanga?  <u>Rautaki 1</u>  Tikina kia 25 ngā \$10. Wehea ki ngā rōpū o te 10. E hia ngā rōpū o te 10?  E 2.</p> <p>E hia te moni o ia rōpū o te 10?  \$100.</p> <p>Hui katoa, e hia te pūtea moni nei?  E \$200 kei ngā rōpū e 2 o te 10, me te \$50 atu anō. Hui katoa, ko te \$250 te tapeke.</p> <p><u>Rautaki 2</u>  Tekau ngā \$10, ka \$100 (<math>\\$10 \times 10 = \\$100</math>).  Rua tekau ngā \$10, ka \$200 (<math>\\$10 \times 20 = \\$200</math>).  E 5 atu anō ngā \$10, ka \$50 (<math>\\$10 \times 5 = \\$50</math>).  Hui katoa, <math>\\$10 \times 25 = \\$250</math></p> <p><u>Rautaki 3</u>  Āta tirohia ngā rapanga kua oti kē te whiriwhiri i mua.  He aha te tauira e kitea mai ana?  <math>10 \times 23 = 230</math>  <math>10 \times 14 = 140</math>  <math>10 \times 20 = 200</math>  <math>10 \times 16 = 160</math>  Ko tā te tauira, he tuhi noa atu i tētahi kore ki te taha matau o te tau e whakareatia ana ki te 10.  Nō reira, <math>10 \times 25 = 250</math></p>														
<p>Kia pērā anō te whiriwhiri i ngā whakareatanga nei:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;"><math>10 \times 13</math></td> <td style="width: 15%;"><math>10 \times 15</math></td> <td style="width: 15%;"><math>10 \times 78</math></td> <td style="width: 15%;"><math>34 \times 10</math></td> <td style="width: 15%;"><math>77 \times 10</math></td> <td style="width: 15%;"><math>62 \times 10</math></td> <td style="width: 15%;">...</td> </tr> <tr> <td><math>10 \times 273</math></td> <td><math>10 \times 615</math></td> <td><math>798 \times 10</math></td> <td><math>304 \times 10</math></td> <td><math>10 \times 730</math></td> <td><math>380 \times 10</math></td> <td>...</td> </tr> </table>	$10 \times 13$	$10 \times 15$	$10 \times 78$	$34 \times 10$	$77 \times 10$	$62 \times 10$	...	$10 \times 273$	$10 \times 615$	$798 \times 10$	$304 \times 10$	$10 \times 730$	$380 \times 10$	...	
$10 \times 13$	$10 \times 15$	$10 \times 78$	$34 \times 10$	$77 \times 10$	$62 \times 10$	...									
$10 \times 273$	$10 \times 615$	$798 \times 10$	$304 \times 10$	$10 \times 730$	$380 \times 10$	...									

## Hei Mahi 4

Ngā tohutohu	He tauira kōrero mā te pouako												
<p>Tuhia te rapanga nei ki te papa tuhituhi, ka pānui tahi ai me ngā ākonga:</p> <p>Kei te haere te akomanga o Whaea Mihi ki te noho hopuni mō te wiki. \$100 te utu mā ia tamaiti. \$1,600 te tapeke o te moni kua kohia mai e Whaea Mihi. Tokohia ngā ākonga i utu i te \$100?</p> <p>Hoatu he moni tākaro ki ngā ākonga ka arataki i a rātou ki te whiriwhiri i te rapanga nei.</p>	<p>Anei te \$1,000 me ētahi \$100 e 6. E hia te tapeke o te moni? \$1,600 te tapeke.</p> <p>Wehea te \$1,000 nei ki ngā \$100. E hia ngā \$100 kei roto i te \$1,000?</p> <p>10.</p> <p>Nō reira e hia katoa ngā \$100 kei roto i te \$1,600?</p> <p>10 me te 6, ka 16.</p> <p>Nō reira 16 ngā ākonga i utu i te \$100.</p> <p>He aha te whārite hei whakaata i tēnei mahi?</p> <p><math>1,600 = 100 \times 16</math>.</p>												
<p>Kia pērā anō te whiriwhiri i te maha o ngā \$100 kei roto i ēnei pūtea:</p> <table style="width: 100%; text-align: center;"> <tr> <td>\$2,000</td> <td>\$1,300</td> <td>\$2,100</td> <td>\$1,100</td> <td>\$6,000</td> <td>\$7,800</td> </tr> <tr> <td>\$2,400</td> <td>\$6,600</td> <td>\$5,670</td> <td>...</td> <td></td> <td></td> </tr> </table> <p>Ina taunga haere ngā ākonga ki tēnei mahi, tērā tonu pea ka kitea te otinga o ēnei rapanga i mua i te whakamahinga o te moni.</p>		\$2,000	\$1,300	\$2,100	\$1,100	\$6,000	\$7,800	\$2,400	\$6,600	\$5,670	...		
\$2,000	\$1,300	\$2,100	\$1,100	\$6,000	\$7,800								
\$2,400	\$6,600	\$5,670	...										

## Hei Mahi 5

Ngā tohutohu	He tauira kōrero mā te pouako
<p>Kia pērā anō te mahi, engari kia nui ake ngā tau.</p> <p>He uaua, he roa tonu te whakamahi rauemi (pērā i te moni tākaro) ki te whiriwhiri i ēnei rapanga mēnā he tau nui. Nō reira me arataki ngā ākonga kia mārama ai rātou ki tēnei tikanga o te uara tū.</p>	<p>E hia ngā \$100 kei roto i te \$7,900?</p> <p>He mahi nui ki te whakamahi i ngā moni tākaro. Nō reira he pai ake kia āta whakaaro i tētahi atu rautaki.</p> <p><u>Rautaki 1</u></p> <p>E hia ngā \$100 kei roto i te \$1,000?</p> <p>10.</p> <p>Nō reira e hia kei roto i te \$7,000?</p> <p>E 70.</p> <p>E hia atu anō ngā \$100 kia eke ki te \$7,900?</p> <p>E 9 atu anō. Hui katoa, e 79 ngā \$100 kei roto i te \$7,900.</p>

	<p><u>Rautaki 2</u></p> <p>Āta tirohia ngā rapanga kua oti kē te whiriwhiri i mua. He aha te tauira e kitea mai ana?</p> <p><math>2,000 = 100 \times 20</math></p> <p><math>1,300 = 100 \times 13</math></p> <p><math>2,100 = 100 \times 21</math></p> <p><math>1,100 = 100 \times 11</math></p> <p><math>6,000 = 100 \times 60</math></p> <p>...</p> <p>Ko tā te tauira, he whakakore noa atu i ngā mati ‘kore’ i te uara tū o ngā tahi me te uara tū o ngā tekau. Ka hua ko te maha o ngā 100.</p> <p>Nō reira he aha te whārite hei whakaata i tēnei rapanga? <math>7,900 = 100 \times 79</math>.</p>
Kia pērā anō te whiriwhiri i te maha o ngā 100 kei roto i ēnei tau:	<p>8,600      9,000      3,400      5,300      ...</p>

### Hei Mahi 6

Ngā tohutohu	He tauira kōrero mā te pouako
<p>Huri kōarotia tēnei mahi. Arā, ka whakawhitiwhiti kōrero mō te whakarea i te 100 ki tētahi tau. Hei tauira:</p> <p><math>100 \times 25 = \square</math></p>	<p>E 25 ngā \$100 i kohia mai e Whaea Mihi. E hia katoa ngā moni i kohia mai e ia?</p> <p>He aha ētahi rautaki hei whiriwhiri i tēnei rapanga?</p> <p><u>Rautaki 1</u></p> <p>Tīkina kia 25 ngā \$100. Wehea ki ngā rōpū o te 10. E hia ngā rōpū o te 10?</p> <p>E 2.</p> <p>E hia te moni o ia rōpū o te 10?</p> <p>\$1,000.</p> <p>Hui katoa, e hia te pūtea moni nei?</p> <p>E \$2,000 kei ngā rōpū e 2 o te 10, me te 500 atu anō. Hui katoa, e \$2,500 te tapeke.</p> <p><u>Rautaki 2</u></p> <p>Tekau ngā \$100, ka \$1,000 (<math>\\$100 \times 10 = \\$1,000</math>).</p> <p>E rua tekau ngā \$100, ka \$2,000 (<math>\\$100 \times 20 = \\$2,000</math>).</p> <p>E 5 atu anō ngā \$100, ka \$500 (<math>\\$100 \times 5 = \\$500</math>).</p> <p>Hui katoa, <math>\\$100 \times 25 = \\$2,500</math>.</p>

	<u>Rautaki 3</u> Āta tirohia ngā rapanga kua oti kē te whiriwhiri i mua. He aha te tauira e kitea mai ana? $100 \times 86 = 8,600$ $100 \times 90 = 9,000$ $100 \times 34 = 3,400$ $100 \times 53 = 5,300$ Ko tā te tauira, he tuhi noa atu kia 2 ngā kore ki te taha matau o te tau e whakareatia ana ki te 100. Nō reira, $100 \times 25 = 2,500$ .					
Kia pērā anō te whiriwhiri i ngā whakareatanga nei:						
$100 \times 13$	$100 \times 15$	$100 \times 78$	$34 \times 100$	$77 \times 100$	$62 \times 100$	...
$100 \times 273$	$100 \times 615$	$798 \times 100$	$304 \times 100$	$100 \times 730$	$380 \times 100$	...
<b>Hei whakawhānui</b>						
E hia ngā \$1,000 kei roto i te:						
\$1,000,000	\$3,500,000	\$4,567,000	...			
E hia ngā \$10,000 kei roto i te:						
\$670,000	\$560,000	\$3,460,000	...			
E hia ngā \$100,000 kei roto i te:						
\$2,500,000	\$5 miriona	...				

## Whakaawhiwhia ki te Tekau

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau ki te whakaawhiwhi tau ki te 10 e pātata ana.

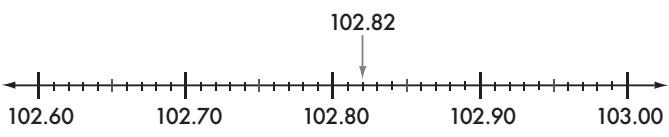
### Hei whakamārama

Ki te utua ngā hokohoko ki te moni pūkoro (ehara mā te kāri, mā te haki rānei), ka whakaawhiwhia te utu ki te 10 hēneti e pātata ana, nā te mea karekau he kotahi hēneti, he rua hēneti, he rima hēneti rānei hei utu i ngā tapeke pēnei i te \$34.18. Ka whakaawhiwhia te \$34.18 ki te \$34.20 (te 10 hēneti e pātata ana).

### Rauemi

- Whakaawhiwhia ki te Tekau (he rārangi tau e whakaatu ana i ngā wehenga hautekau) (Rauemi Tārua 4-26).

### Hei Mahi

Ngā tohutohu	He tauira kōrero mā te pouako												
<p>Tuhia te rapanga nei ki te papa tuhituhi, ka pānui tahi ai me ngā ākonga:</p> <p>Ko te \$102.82 te tapeke o te utu o ngā kai i hokona e Mihiroa i te hokomaha. Ka utua ki te moni pūkoro. E hia te utu ka utua e Mihiroa?</p> <p>Aratakina ngā ākonga kia whakamahi i te rārangi tau hei whakaawhiwhi i te \$102.82 ki te 10 hēneti e pātata ana.</p>	<p>Me pēhea te utu i te 82 hēneti?</p> <p>Kāore e taea nā te mea karekau he 2 hēneti.</p> <p>Ko tā te hokomaha, he whakaawhiwhi i te tapeke ki te 10 hēneti e pātata ana, koirā te utu ka utua e Mihiroa. Anei tētahi rārangi tau e whakaatu ana i ngā 10 hēneti kei te takiwā o te \$102.82. Ko hea te wāhi tika mō te \$102.82?</p>  <p>E pātata ana te 102.82 ki te 102.80, nō reira koirā te utu ka utua e Mihiroa.</p>												
<p>Kia pērā anō te tuhi rārangi tau hei whakaawhiwhi i ēnei tau ki te 10 hēneti e pātata ana. Whakamahia ngā rārangi tau kei te Whārangi Tārua 4-26. Kia taunga ngā ākonga ki tēnei mahi, me arataki rātou kia whakaahua ā-hinengaro i te rārangi tau, kia whakaawhiwhi i te tau ki roto anō i ūrātou hinengaro:</p> <table style="width: 100%; text-align: center;"> <tr> <td>\$345.09</td> <td>\$8.53</td> <td>\$5.61</td> <td>\$75.18</td> <td>\$0.36</td> <td>\$149.99</td> </tr> <tr> <td>\$65.08</td> <td>\$99.99</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	\$345.09	\$8.53	\$5.61	\$75.18	\$0.36	\$149.99	\$65.08	\$99.99					
\$345.09	\$8.53	\$5.61	\$75.18	\$0.36	\$149.99								
\$65.08	\$99.99												

## He Mati Nukunuku

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau ki te whakarea i tētahi tau ā-ira ki te 10, ki te 100, ki te 1,000.

### Hei whakamārama

I te ngohe ‘Whakawhitia ngā Paparanga Uara Tū’ (wh. 88) i tūhuratia tētahi tikanga mō te whakarea i tētahi tau ki te 10, ki te 100 ki te 1,000 hoki. Arā, ko te tuhi noa i t/ētahi 0 ki te taha matau o te tau e whakareatia ana (hei tauira  $23 \times 10 = 230$ ). E pai ana tēnei tikanga mō te whakarea i tētahi tauotī, engari ka raruraru mēnā ka whāia noatia tēnei tikanga mō te whakarea i tētahi tau ā-ira. Hei tauira:  $2.3 \times 10 \neq 2.30$

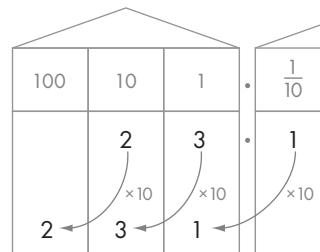
### Rauemi

- He tātaitai

### Hei Mahi 1

Ngā tohutohu	He tauira kōrero mā te pouako
<p>Tuhia te rapanga nei ki te papa tuhituhi, ka pānui tahi ai me ngā ākonga:</p> <p>10 ngā pēke huka, e 23kg te taumaha o ia pēke. Ka tātaihia e Huria te taumaha o ngā pēke katoa. Ka tuhi noa iho ia i tētahi kore ki te taha matau o te 23. Arā, ko te 230kg te taumaha.</p> <p>Ka āta inea e Hana te taumaha o ngā pēke huka, ā, ka kitea ko te 23.1kg kē te taumaha o ia pēke. Ka whai ia i te rautaki a Huria ki te whakarea i te 23.1 ki te 10. Ka tuhi noa ia i tētahi kore ki te taha matau o te 23.1. E ai ki a Hana ko te 23.10 te taumaha o ngā pēke huka katoa.</p> <p>Aratakina ngā ākonga kia mārama ki te tikanga mō te whakarea i tētahi tau ā-ira ki te 10.</p>	<p>He aha tātou i mōhio ai kāore e tika ana te mahi a Hana ki te tātai i te taumaha o ngā pēke huka katoa?</p> <p>E tino pātata ana te 23.1 ki te 23. E mōhio ana tātou ko te 230 te otinga o te 23 <math>\times</math> 10. Nō reira e pātata ana te otinga o te 23.1 <math>\times</math> 10 ki te 230. He tino tawhiti kē te 23.10.</p> <p>Whakamahia te tātaitai ki te whakarea i te 23.1 ki te 10. He aha te otinga?</p> <p>Ko te 231.</p> <p>Kia titiro tātou ki ia mati o te tau 23.1, ka whakarea ai ki te 10. E tohu ana te 2 i te aha?</p> <p>I te 20.</p> <p>Whakareatia te 20 ki te 10, ka 200.</p> <p>Whakareatia te 3 ki te 10 ka 30.</p> <p>Whakareatia te 0.1 ki te 10, ka 1.</p> <p>Hui katoa, ko te 231. Anei te raupapatanga whārite:</p> $20 \times 10 = 200$ $3 \times 10 = 30$ $0.1 \times 10 = 1$ $\mathbf{23.1 \times 10 = 231}$

Kia titiro tātou ki te tūtohi uara tū:



He aha te tauira e kitea mai ana i te tūtohi mō te whakarea i tētahi tau ki te 10?

Ko te nuku i ngā mati katoa kia kotahi te uara tū ki te taha mauī.

Hoatu ētahi atu whakareatanga pēnei hei whakaoti. Tonoa ngā ākonga kia tuhi pakitau.

$$34.2 \times 10 \quad 2.1 \times 10 \quad 56.8 \times 10 \quad 2.86 \times 10 \quad 362.79 \times 10 \quad \dots$$

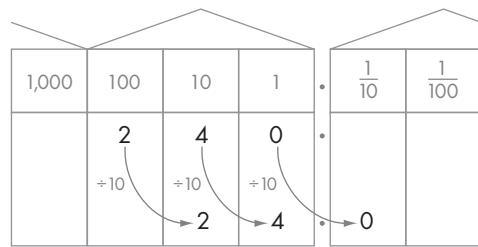
### Hei Mahi 2

Kia pērā anō te arataki i ngā ākonga kia mārama ki ngā tikanga mō te whakarea i tētahi tau ki te 100, ki te 1,000 hoki.

### Hei Mahi 3

Ngā tohutohu	He tauira kōrero mā te pouako
<p>Tuhia te rapanga nei ki te papa tuhituhi, ka pānui tahi ai me ngā ākonga:</p> <p>10 ngā kōpae i hokona e Roimata, e \$240 te utu. E hia te utu mō te kōpae kotahi?</p> <p>Whakawhitiwhiti kōrero mō te whakawehe i tētahi tau ki te 10. Arā, ka nukua ngā mati katoa o te tau kia kotahi te uara tū ki te taha matau.</p>	<p>He aha te whārite hei whakaata i te rapanga nei?</p> <p>Whakawehea te 240 ki te 10. Arā, <math>240 \div 10</math>.</p> <p>Anei tētahi rautaki hei whakaoti i te whakawehenga nei. Rohaina te 240 ki ūna wāhanga uara tū.</p> <p>Arā: <math>240 = 200 + 40</math></p> <p>Whakawehea ia wāhanga ki te 10. E hia ngā 10 kei roto i te 200?</p> <p>10 ngā 10 kei roto i te 100, nō reira e 20 ngā 10 kei roto i te 200.</p> <p>E hia ngā 10 kei roto i te 40?</p> <p>E 4.</p> <p>Anei te raupapatanga whārite:</p> $\begin{aligned} 240 &= 200 + 40 \\ 240 \div 10 &= (200 \div 10) + (40 \div 10) \\ &= 20 + 4 \\ &= 24 \end{aligned}$

Kia titiro tātou ki tēnei whakawehenga i te tūtohi uara tū.



He aha te tauira e kitea mai ana i te tūtohi uara tū mō te whakawehē i tētahi tau ki te 10?

Ko te nuku i ia mati o te tau kia kotahi te uara tū ki te taha matau.

Kia pērā anō te arataki i ngā ākonga kia whakaoti i ēnei whakawehenga:

$$243 \div 10 \quad 621 \div 10 \quad 45 \div 10 \quad 3 \div 10 \quad 35.6 \div 10 \quad 24.58 \div 10 \quad \dots$$

#### Hei Mahi 4

Kia pērā anō te arataki i ngā ākonga kia mārama ki te tikanga mō te whakawehē i tētahi tau ki te 100, ki te 1,000 hoki.





## Wāhanga 5

# Ngā Meka Matua



## Ki te Tekau

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau ki te whakautu wawe i ngā meka tāpiritanga matua, ko te 10, iti ake rānei te otinga.

### Hei whakamārama

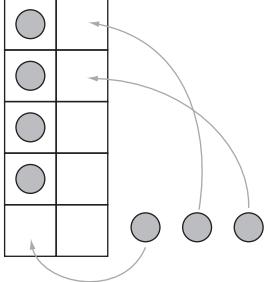
He mea nui kia mau ki te pūmahara o te ākonga ngā meka tāpiritanga matua (me ngā meka tangohanga e hāngai ana) ko te 10, iti ake rānei te otinga. He mātauranga tūāpapa tēnei e piki ai te ākonga ki te Kaupae 5, Te Pihinga o te Wāwāhi Tau, arā, kia tīmata ia ki te tūhura i ngā rautaki wāwāhi tau.

E taea ana ngā meka tāpiritanga ki tua atu i te 10 te whiriwhiri mā te wāwāhi tau me te whakamahi i ngā meka tāpiritanga ki raro iho i te 10. Hei tauira: Ka whiriwhiria te  $8 + 6$ , mā te tango i te 2 i te 6 me te tāpiri i taua 2 ki te 8. Ka puta ko te  $10 + 4$ . E tutuki ai tēnei mahi, me mōhio te ākonga ki ngā meka matua  $6 - 2 = 4$ , me te  $8 + 2 = 10$ .

### Rauemi

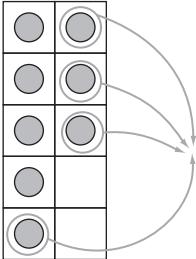
- Anga Tekau (Rauemi Tārua 4-6)
- He porotiti

### Hei Mahi 1

Ngā tohutohu	He tauira kōrero mā te pouako
<p>Aratakina ngā ākonga kia whakamahi i te anga tekau hei ake i ngā meka tāpiritanga. He mea nui kia kitea e te ākonga ngā rōpū o te 5 i te anga tekau.</p>	<p>Anei te tāpiritanga hei tirotiro mā tātou. Tāpiria ngā porotiti e 4 me ngā porotiti e 3.</p>  <p>Anei te anga tekau e whakaatu ana i ngā porotiti e 4. Anei ngā porotiti e 3 hei tāpiri atu. Whakatakotoria ngā porotiti ki te anga tekau. Whakakīa te taha mauī i te tuatahi.</p>  <p>Kaua e tatau i ngā porotiti, engari kōrero mai ki ahau, e hia katoa ngā porotiti. E 7 katoa.</p> <p>I pēhea koe i mōhio ai? I kite noa iho au i te 5 ki te taha mauī, me te 2 atu anō. Ka 7.</p>

Kia pērā anō te mahi hei whiriwhiri i ētahi atu o ngā meka tāpiritanga. Kia taunga ngā ākonga ki tēnei mahi, ka arataki i a rātou ki te whakaahua ā-hinengaro i te anga tekau hei whakaoti i ngā tāpiritanga.

## Hei Mahi 2

Ngā tohutohu	He tauira kōrero mā te pouako
<p>Aratakina ngā ākonga kia whakamahi i te anga tekau hei ako i ngā meka tangohanga.</p>	<p>Anei ētahi porotiti e 8. Tangohia kia 4, e hia ka toe mai?</p> <p>Anei te wharite: <math>8 - 4 = \square</math>. Ko tā tātou mahi he whiriwhiri i te tau hei tuhi atu ki roto i te pouaka. Koirā te otinga o te tangohanga.</p> <p>Whakatakotoria kia 8 ngā porotiti ki te anga tekau. Whakakīia te taha mauī i te tuatahi, kātahi ka whakatakoto ai i ētahi ki te taha matau.</p> <p>Ko te mahi ināianei, he tango atu i te 4. Tangohia ngā mea i te taha matau i te tuatahi, kātahi ko te taha mauī.</p>  <p>Kaua e tatau, engari ka kōrero mai ki ahau, e hia ngā porotiti e toe mai ana. E 4.</p> <p>I pēhea koe i mōhio ai? E mōhio ana ahau he kotahi te iti ake i te 5.</p>
<p>Kia pērā anō te mahi mō ētahi atu meka tangohanga. Kia taunga ngā ākonga ki tēnei mahi, ka arataki i a rātou ki te whakaahua ā-hinengaro i te whakamahinga o te anga tekau hei whakaoti tangohanga.</p>	

## Rearua

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau i ngā meka rearua, ki te whakamahi hoki i ngā meka rearua hei whakaoti tāpiritanga.

### Rauemi

- He anga pirepire
- Ngaku Pī Huripoki (Rauemi Tārua 4-5)
- Anga Tekau (Rauemi Tārua 4-6)
- Uhia ngā Tau (Rauemi Tārua 4-33)

### Hei Mahi 1

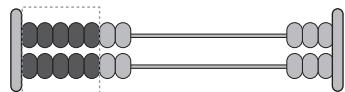
Ngā tohutohu	He tauira kōrero mā te pouako
Nukua kia 3 ngā pirepire i ētahi rārangī e rua o te anga pirepire. Aratakina ngā ākonga kia whakamahi i te anga pirepire me ū rātou matimati hei whiriwhiri i te otinga o ngā tāpiritanga rearua me ngā tāpiritanga e tino pātata ana.	<p>Titiro ki te anga pirepire. E hia ngā pirepire e whakaaturia ana ki ia rārangī?</p> <p>E 3.</p> <p>Whakaaturia ētahi matimati e 3 ki ū ringaringa e rua. E hia katoa ū matimati e whakaaturia ana?</p> <p>E 6.</p> <p>He aha te whārite?</p> <p><math>3 + 3 = 6</math>.</p> <p>Tāpiria te 3 me te 3 ka 6. Rearuatia te 3 ka 6.</p> <p>Whakaaturia mai te 3 tāpiri i te 4 ki ū matimati.</p> <p>E 3 ngā mati ki tētahi ringaringa, e 4 ngā matimati ki tētahi.</p> <p>Kaua e tatau i ū matimati, engari kōrero mai e hia katoa ngā matimati e whakaaturia ana.</p> <p>E 7.</p> <p>I pēhea koe i mōhio ai?</p> <p>E 3 me te 3 ka 6. E 3 me te 4 ka 7. Kotahi te nui ake i te 6.</p> <p>E hia katoa ngā pirepire e whakaaturia ana ki ngā rārangī e rua o te anga pirepire?</p> <p>E 6. E 3 me te 3 ka 6.</p> <p>Whakaaturia mai te 3 tāpiri i te 4 ki te anga pirepire. E hia katoa ngā pirepire?</p> <p>E 7. E 3 me te 3 ka 6. Nukua tētahi anō pirepire, ka 7.</p>

Kia pērā anō te arataki i ngā ākonga ki te whiriwhiri i ngā tāpiritanga nei:

$$2 + 2 = \square, 2 + 3 = \square \quad 5 + 5 = \square, 4 + 5 = \square \quad 4 + 4 = \square, 5 + 3 = \square \quad \dots$$

## Hei Mahi 2

Kia pērā anō te whiriwhiri i ngā tāpiritanga rearua mai i te 6 ki te 10. Whakawhitihiti kōrero mō ngā rōpū o te 5 e kitea mai ana i te rearuatanga o ngā tau. Hei tauira, ko te  $7 + 7$ . Kia pēnei te whakaatu ki te anga pirepire:



He mārama te kite i ngā rima e 2. Ko te 10 tērā me te 4 atu anō, ka 14. Mēnā ko te  $8 + 7$  te tāpiritanga, he kotahi te nui ake i te  $7 + 7$ , ka 15.

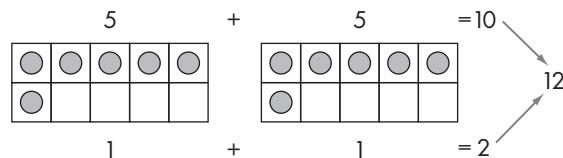
Koia nei ngā tāpiritanga hei whakatauira ki te anga pirepire, ki ngā matimati anō hoki:

$$6 + 6 = \square, 6 + 7 = \square \quad 9 + 9 = \square, 8 + 9 = \square \quad 8 + 8 = \square, 7 + 8 = \square \quad \dots$$

Hoki atu, hoki atu ki tēnei mahi kia tino mau ngā meka rearua ki te pūmahara o te ākonga. Whakamahia he rauemi maha, pērā i:

- te anga tekau
- ngā matimati o ngā ākonga (ka noho tauaro tētahi ākonga i tētahi hei whakaatu i ngā tāpiritanga pērā i te  $7 + 7$ )
- ngā kāri mai i te **Rauemi Tārua 4-5 ‘Ngaku Pī Huripoki’**.

Koinei te tāpiritanga rearua  $6 + 6$  ki te anga tekau:



## Hei whakawhānui:

Tākarohia te kēmu ‘Uhia ngā Tau’.

### Rauemi

- He kāri tākarō mā ia ākonga (**Rauemi Tārua 4-33**).
- Kia whā ngā mataono tau. Tuhia ngā tau 5, 6, 7, 8, 9, me te 10 ki ngā mata.
- Kia 12 ngā porotiti mā ia ākonga.

### Ngā tohutohu

- Ka whai tētahi ākonga i tētahi ki te pīrori i ngā mataono tau e whā (i te wā kotahi).
- Mēnā e rua ngā putanga o te tau kotahi, ka tāpiria aua tau e rua. Hei tauira, mēnā ka puta te 6, te 9, te 5, me te 6, e rua ngā ono. Tāpiria, ka 12.

- Ka kimihiā te tau kotahi te nui ake, te iti ake rānei i te kāri tākaro, ā, ka uhia taua tau ki te porotiti (ko te 11, te 13 rānei i te tauira e kōrerohia nei).
- Kia kotahi anake te tau ka uhia ki te kāri tākaro i ia putanga huirua.
- Mēnā e rua ngā putanga huirua (pērā i te 5, 8, 8, 5) i te pīroritanga kotahi, e rua ngā tau ka uhia ki te kāri tākaro.
- Mēnā e toru ngā putanga o tētahi tau (pērā i te 7, 7, 7, 5), kotahi anake te tau ka uhia.
- Ka toa te tamaiti tuatahi ki te uhi i ngā tau katoa o tana kāri tākaro.

## Ngā Meka Tāpiritanga ki te Anga Pirepire

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau i ngā meka tāpiritanga, ko te 10, iti ake rānei te otinga.

### Rauemi

- He anga pirepire

### Hei Mahi

Ngā tohutohu	He tauira kōrero mā te pouako
Nukua ētahi pirepire (hei tauira, kia 6). Ko tā ngā ākonga he kī atu e hia ngā pirepire, engari kāore rātou e tatau.  Whakawhitihiti kōrero mō te whakamahi i ngā rōpū o te 5.	E hia ngā pirepire kua nukua ki te taha? Kaua e tatauria. E 6.    I pēhea koe i mōhio ai? E 5 ngā mea kōwhai, kotahi atu anō, ka 6.
Nukua kia 5 ngā pirepire, ka pātai ai e hia atu anō kia 9.  Whakawhitihiti kōrero mō te whakamahi i ngā rōpū o te 5.	Anei ngā pirepire e 5. E hia atu anō kia 9? E 4.  E 5 me te 5 ka 10. Nō reira e 5 me te 4, ka 9. Kotahi te iti ake.
Nukua ētahi pirepire ki te taha (hei tauira, kia 7), ka pātai ai e hia atu anō kia 10.	E hia ngā pirepire kua nukua ki te taha? E 7.  Ka pai. E 5 me te 2 atu anō, ka 7.  E hia atu anō kia 10? E 3.  Tatau ake i te 7. 8, 9 10. E 3 i tāpiria atu kia 10.

## Honohono Tau

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau i ngā meka tāpiritanga matua.

### Rauemi

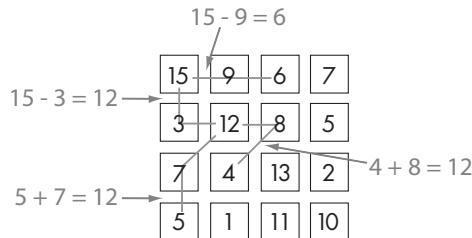
- Honohono Tau (Rauemi Tārua 4-34)

### Ngā tohutohu

- Hoatu tētahi o ngā kāri tākaro o te kēmu Honohono Tau ki ia ākonga (takirua ākonga rānei), tuhia rānei ki te papa tuhituhi.
- Ko tā ngā ākonga, he tuhi i te maha rawa atu o ngā tāpiritanga, ngā tangohanga rānei e taea ana i roto i te 2, te 3 meneti rānei.

### Ngā ture

- Kia noho pipiri ngā tau o roto i te tāpiritanga (tangohanga) ki te kāri, tētahi ki te taha o tētahi. E pai ana mēnā e noho whakatepou ana, he huapae, he tītaha rānei te noho.  
Hei tauira, mō te papa e whakaaturia nei:  $15 - 9 = 6$ ,  $15 - 3 - 12$ ,  $5 + 7 = 12$ ,  $4 + 8 = 12 \dots$



- Kia toru, nui ake rānei ngā tau o ia whārite.
- Kia kotahi, nui ake rānei ngā tāpiritanga, tangohanga rānei o ia whārite.
- Kia kotahi anake te whakamahinga o tētahi tau i te whārite kotahi.
- Kotahi māka te whiwhinga mō ia tau i roto i ngā whārite. Hei tauira, e 5 ngā māka mō te whārite nei:  
 $15 - 3 - 7 = 4 + 1$

## He Anga Tekau

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

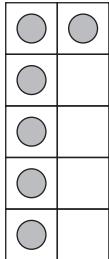
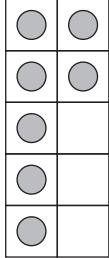
Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E whakapakari ana ahau i taku mōhio ki ngā tauhono takirua ko te 10 te tapeke, kia wawe taku whakaputa i ngā otinga o ēnei meka tāpiritanga me ngā meka tangohanga e whai pānga ana.

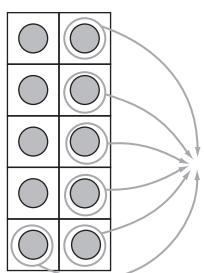
### Rauemi

- Anga Tekau (Rauemi Tārua 4-6)

### Hei Mahi

Ngā tohutohu	He tauira kōrero mā te pouako
<p>Whakatakotoria tētahi anga tekau ki mua i te ākonga, ka pātai atu ai e hia ngā ira/porotiti e whakaaturia ana. Ko te whāinga, kia wawe tana kite atu i te maha o ngā ira, kāore ia e tatau rawa.</p>  <p>Ko te kite atu i te rōpū o te 5 me te mōhio ki ngā meka tauhono me te 5 te mea matua i tēnei akoranga.</p>	<p>Ka whakaaturia tētahi anga tekau mō te wā poto noa iho. Ko tā koutou mahi he kōrero mai, e hia ngā ira e whakaaturia ana ki te anga tekau.</p> <p>E hia ngā ira?</p> <p>E 6.</p> <p>I pēhea koe i mōhio ai?</p> <p>I kite au i te 5 me te 1.</p> <p>He aha te whārite tāpiritanga e hāngai ana?</p> <p><math>5 + 1 = 6</math>.</p>
<p>Kia pērā anō te mahi, engari ka aro kē ki te maha o ngā wāhi e wātea ana.</p> 	<p>I tēnei wā, kōrero mai ki ahau, e hia ngā ira, e hia hoki ngā wāhi wātea i te anga tekau.</p> <p>E 7 ngā ira, e 3 ngā wāhi wātea.</p> <p>E hia katoa ngā wāhi i te anga tekau?</p> <p>10.</p> <p>Nō reira, tāpirihia ngā ira e 7 me ngā wāhi wātea e 3, ka hia katoa?</p> <p>Ka 10.</p> <p>Tuhia te whārite.</p> <p><math>7 + 3 = 10</math>.</p>

Whakamahia te anga tekau e whakaatu ana i ngā ira 10. Aratakina ngā ākonga kia whakaahua ā-hinengaro i ngā rapanga tango.



10 ngā ira e whakaaturia ana ki te anga tekau nei. Mēnā ka tango au i te 6, ko ēhea ngā ira ka tangohia atu?

Āta whakaaro i roto i ū koutou hinengaro, e hia ngā ira ka toe mai?

E 4.

I pēhea koe i mōhio ai?

Kotahi te iti ake i te 5.

12 ngā paheko rerekē e hāngai ana ki ia meka matua hei tirotiro, kia ū ki te hinengaro o te ākonga. Hei tauira:

$$3 + 7 = \square$$

$$\square + 7 = 10$$

$$3 + \square = 10$$

$$7 + 3 = \square$$

$$\square + 3 = 10$$

$$7 + \square = 10$$

$$10 - 7 = \square$$

$$\square - 7 = 3$$

$$10 - \square = 3$$

$$10 - 3 = \square$$

$$\square - 3 = 7$$

$$10 - \square = 7$$

## Ngā Tauhono o te Tekau

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau i ngā meka tāpiritanga ko te 10 te otinga, me ngā meka tangohanga e whai pānga ana.

### Rauemi

- He huinga poraka honohono (kia 10 ngā poraka ki ia huinga, e 5 o tētahi tae, e 5 o tētahi atu tae)

### Ngā tohutohu

He mahi takirua tēnei. Kia pēnei te honohono i ngā poraka:



Ka mahi huna tētahi o ngā ākonga ki te tango i ētahi poraka honohono. Ka whakaaturia ngā poraka e toe mai ana. Ko tā te ākonga tuarua, he kōrero atu e hia ngā mataono i tangohia atu.

Hei tauira:

Ka whakaaturia tēnei hononga poraka:



Koinei ngā mea i tangohia atu, e huna tonu ana:



Ka tuhia hoki te whārite e hāngai ana:  $10 - 3 = 7$

### Hei whakawhānui

Kia pērā anō te mahi, engari kia rua ngā huinga poraka o te 10, ā, ka tirotirohia ngā meka tāpiritanga ko te 20 te otinga me ngā meka tangohanga e whai pānga ana.

## Aho Pirepire

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau ki te whakamahi i aku meka matua ki te tāpiri i tētahi tau mati-1 ki tētahi tau mati-2, ki te tango rānei i tētahi tau mati-1 i tētahi tau mati-2.

### Rauemi

- He aho pirepire, kia 100 ngā pirepire e whakaatu ana i ngā rōpū o te 5, me te tohu hoki i ngā rōpū o te 10 ki te mātiti
- He mataono tau kua tapaina ngā mata ki te 5, 6, 7, 8, 9, 10

### Te kēmu 1

- He mahi ā-rōpū tēnei. Hoatu he aho pirepire ki ia rōpū me tētahi mātiti mā ia ākonga (kia rerekē te tae mā tēnā, mā tēnā).
- Ka whai tētahi ākonga i tētahi ki te pīrori i te mataono tau.
- Ko te tau ka puta hei tohu i te maha o ngā pirepire hei haere whakamua mā taua ākonga. Ka tohua te wāhi ki te mātiti.
- Ko te ākonga tuatahi kia eke ki tua atu i te 100, ko ia te toa.

Ko te whāinga, kia kaua ngā ākonga e tatau i ngā pirepire, engari mā te tāpiri e mōhio ai rātou ki hea whakamau ai i te mātiti. Hei tauira, mēnā kei te 18 te mātiti a tētahi, ā, ka pīroria te 7, mā te tāpiri i te 2 i te tuatahi, kātahi ko te 5, ka tau atu ki te 25. Arā:  $18 + 7 = 18 + 2 + 5 = 20 + 5 = 25$ .

### Te kēmu 2

Kia pērā anō te mahi, engari ka tīmata i te 100, ka haere whakamuri ai ki te 0, hei whakapakari i te mahi tango.

## Raupapatanga Meka Matua

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau i ngā meka matua (+, -, ×, ÷).

### Rauemi

- Kia 3 ngā mataono tau
- He papa tuhituhi
- He porotiti
- Raupapatanga Meka Matua (Rauemi Tārua 4-39)

### Ngā tohutohu

- Mā ia ākonga e tuhi te tapatoru o ngā porowhita me ngā tau 1–10 ki roto i ngā porowhita, ka hoatu rānei i te **Rauemi Tārua 4-39** ki ia ākonga.
- Ka whai tētahi ākonga i tētahi ki te pīrori i ngā mataono tau e 3.
- Ka whakamahia ngā tau e toru ka puta hei tuhi i tētahi whārite. E pai ana te whakamahi i ngā paheko e 4 (arā, te tāpiri, te tango, te whakarea me te whakawehe), me ngā taiapa hoki i roto i te whārite.
- Ko te whāinga, kia ōrite te otinga o te whārite ki tētahi tau o roto i te tapatoru porowhita. Ka uhia taua tau ki te porotiti. Hei tauira, ki te pīrorihia te 6, te 2 me te 4, koia nei ētahi whārite:
 
$$6 \times 2 \div 4 = 3.$$

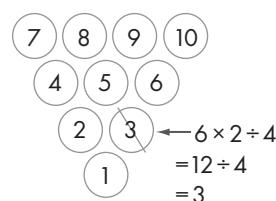
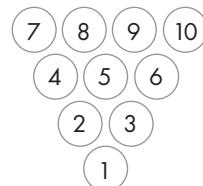
$$Ka uhia te 3.$$

$$6 + 4 - 2 = 8.$$

$$Ka uhia te 8.$$

$$6 - 4 \times 2 = 4.$$

$$Ka uhia te 4.$$
- Ko te ākonga tuatahi ki te uhi i ngā tau katoa o tana tapatoru porowhita, ko ia te toa.



### Hei whakawhānui

E taea ana te whakarerekē ngā tau me ngā paheko kia uaua ake, mā ngā ākonga kua eke atu ki te Kaupae 7 me tua atu. Hei tauira:

Tuhia ngā tau 11–20 ki ngā porowhita. Whakamahia ngā paheko e whā (+, -, ×, ÷), te pūrua, te pūtakerua, te huarea<sup>1</sup>, me ngā tau ā-ira.

Ki te pīrorihia te 3, te 3 me te 6, koia nei ētahi whārite e taea ana:

$$3! \div 3 \times 6 = 12$$

$$3! + 3! + 6 = 18$$

$$3 \div 0.\dot{3}^2 + 6 = 15$$

$$3! \div 0.\dot{3} - 6 = 12$$

...

<sup>1</sup>Hei tauira mō tēnei mea te huarea (ko te '!' te tohu):  $3! = 3 \times 2 \times 1 = 6$ ,  $5! = 5 \times 4 \times 3 \times 2 \times 1 = 120$

<sup>2</sup>Hei tohu i te hautanga ā-ira tāruarua. Arā,  $0.\dot{3} = 0.3333333 \dots = \frac{1}{3}$ .

## Whiriwhiria te Paheko

Mahere Tau	0	1	2	3	4	5	6	7	8
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Whanaketanga	1a	1e	2a	2e	3a	3e	4a	4e	5a
--------------	----	----	----	----	----	----	----	----	----

E ako ana ahau i ngā meka matua.

### Hei Mahi

Ngā tohutohu		He tauira kōrero mā te pouako													
Tuhia te tūtohi nei ki te papa tuhituhi, ka arataki ai i ngā ākonga ki te whiriwhiri i te paheko:		Titiro ki te tūtohi nei. I whakaurua ngā tau i te taha mauī o te tūtohi ki tētahi tātaitai, kātahi ko tētahi paheko (te tāpiri, te tango, te whakarea, te whakawehe rānei), ā, ka tuhia ngā tau ka puta i te tātaitai ki te taha matau o te tūtohi.													
<table border="1"> <thead> <tr> <th>Tau whakauru</th> <th>Tau whakaputa</th> </tr> </thead> <tbody> <tr> <td>3</td> <td>8</td> </tr> <tr> <td>10</td> <td>15</td> </tr> <tr> <td>1</td> <td>6</td> </tr> <tr> <td>6</td> <td>11</td> </tr> <tr> <td>14</td> <td>19</td> </tr> </tbody> </table>		Tau whakauru	Tau whakaputa	3	8	10	15	1	6	6	11	14	19	<p>Āta tirohia, ka kōrero mai ai he aha te paheko. Tāpiria te 5.</p>	
Tau whakauru	Tau whakaputa														
3	8														
10	15														
1	6														
6	11														
14	19														

Kia pērā anō te mahi mō ētahi atu paheko. Hei tauira:

Tau whakauru	Tau whakaputa	Tau whakauru	Tau whakaputa	Tau whakauru	Tau whakaputa
2	9	2	6	6	2
4	11	4	12	12	8
1	8	5	15	15	11

### Hei whakawhānui

Kia uua ake ngā tau me ngā paheko, kia rua rānei ngā paheko. Hei tauira:

$\times 0.5$	$\times 1.5$	$+ 1, \times 2$			
Tau whakauru	Tau whakaputa	Tau whakauru	Tau whakaputa	Tau whakauru	Tau whakaputa
3	1.5	3	4.5	3	8
10	5	10	15	10	22
1	0.5	1	1.5	1	4
6	3	6	9	6	14
14	7	14	21	14	30

## Whakareatia

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau i ngā meka whakareatanga matua.

### Rauemi

- He papa tākaro ‘Otinga Whakarea’ (Rauemi Tārua 4-16)
- Kia 3 ngā mataono tau
- He porotiti

### Ngā tohutohu

- He mahi ā-rōpū tēnei, kia 4 ki te 6 ngā ākonga ki ia rōpū.
- Hoatu ētahi porotiti ki ia ākonga o te rōpū, kia rerekē te tae mā tēnā ākonga, mā tēnā.
- Ka whai tētahi ākonga i tētahi ki te pīrori i ngā mataono tau e 3.
- Ka whakareatia ngā tau e toru ka puta, ā, mēnā ka kitea te otinga o te whakareatanga ki te papa tākaro, ka uhia ki te porotiti (tāna ake tae).
- Ko te ākonga tuatahi ki te whakarārangī i ētahi porotiti e 3 ki te papa tākaro, ko ia te toa.

## He Ara Paheko Tau

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau i ngā meka matua (+, -, ×, ÷).

### Rauemi

- Te huinga kāri ‘He Ara Paheko Tau’ (Rauemi Tārua 4-17)

### Ngā tohutohu

- He mahi ā-rōpū tēnei. Tohaina ngā kāri ki ngā ākonga o te rōpū.
- Ko te ākonga kei a ia te kāri tīmatanga, māna e pānui tana kāri. Arā, ka kōrero atu ki tana rōpū “Te Tīmatanga, tahi ira rua (1.2). Tāpiria te ira waru (0.8).” Kātahi ia ka whakatakoto i te kāri.
- Ko te ākonga kei a ia te kāri whakautu (te otinga o te tāpiritanga 1.2 + 0.8), māna e pānui tāna kāri, arā, “Rua ira kore. Whakawehia ki te whā.” Kātahi ka whakatakoto i te kāri ki runga i te kāri tuatahi.
- Ka pēnei te haere o te kēmu, kia tae rawa ake ki te kāri whakamutunga.

## Whārite Tāpiritanga

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau i aku meka tāpiritanga matua.

### Rauemi

- Te huinga kāri ‘Whārite Tāpiritanga’ (Rauemi Tārua 4-29)

### Ngā tohutohu

Whakaaturia tētahi o ngā kāri, hei tauira:



Ko tā ngā ākonga he tuhi i ngā whārite tāpiri me ngā whārite tango 12 e whai pānga ana ki aua tau. Arā:

$$3 + 6 = \square$$

$$\square + 6 = 9$$

$$3 + \square = 9$$

$$6 + 3 = \square$$

$$\square + 3 = 9$$

$$6 + \square = 9$$

$$9 - 6 = \square$$

$$\square - 6 = 3$$

$$9 - \square = 3$$

$$9 - 3 = \square$$

$$\square - 3 = 6$$

$$9 - \square = 6$$

## Te Whakarea hei Whakaoti Whakawehenga

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau ki te whakamahi i ngā meka whakareatanga matua hei whakaoti whakawehenga.

### Hei whakamārama

Kia eke ngā ākonga ki te Kaupae 6, kua mārama haere rātou ki te rautaki huri kōaro hei whakaoti whakawehenga. He māmā mēnā kāore he toenga o te whakawehenga (pērā i te  $12 \div 4 = \square$   $4 \times \square = 12$ ).

He uua ake mēnā he toenga ka hua mai i te whakawehenga. Hei tauira, ko te  $45 \div 6$ . Ka whakaputa wawe i te tuatahi te meka whakarea mō te 6 e pātata ana ki te otinga, arā, ko te  $6 \times 7 = 42$ . Kātahi ka kitea ake te 3 e toe mai ana.

### Rauemi

- He porotiti, he kōhatu rānei

### Hei Mahi 1

Ngā tohutohu	He tauira kōrero mā te pouako
Tuhia te rapanga nei ki te papa tuhituhi, ka whakawhitihitī kōrero ai mō te rautaki tohatoha hei whakaoti whakawehenga:  15 ngā māpere hei tohatoha ki ētahi tamariki tokorima. E hia māpere ka riro i tēnā me tēnā o ngā tamariki nei?	Tangohia kia 15 ngā porotiti hei tohu i ngā māpere.  Ko tā tātou mahi, he whakawehē i ngā porotiti nei ki ētahi rōpū ūrite. Kia hia ngā rōpū? Kia 5, nā te mea tokorima ngā tamariki.  Tuhia ētahi porowhita e 5. Āta whakaahuangia ki ūkoutou hinengaro te tohatoha i ngā porotiti ki ngā porowhita e 5 nei. E hia ka tohaina ki ia porowhita? E 3.  Mēnā ka tohaina ētahi porotiti e 3 ki ia porowhita, ka pau katoa ngā porotiti? Āe.
	I pēhea koutou i mōhio ai? Ki te whakareatia te 3 ki te 5, ka 15. E mōhio ana ahau ki te whakareatanga $3 \times 5 = 15$ .  He aha te whārite whakawehē? $15 \div 5 = 3$ .
	Kia pērā anō te mahi mō ētahi atu meka whakareatanga kua mau kē ki te pūmahara o ngā ākonga.

## Hei Mahi 2

Ngā tohutohu	He tauira kōrero mā te pouako
<p>Tuhia te rapanga nei ki te papa tuhituhi, ka whakawhitihiti kōrero ai mō te rautaki tohatoha hei whakaotī whakawehenga:</p> <p>17 ngā māpere hei tohatoha ki ētahi tamariki tokotoru. E hia ngā māpere ka riro i tēnā me tēnā o ngā tamariki nei?</p>	<p>Tangohia kia 17 ngā porotiti hei tohu i ngā māpere.</p> <p>Ko tā tātou mahi, he whakawehe i ngā porotiti nei ki ētahi rōpū ūrite. Kia hia ngā rōpū?</p> <p>Kia 3 nā te mea tokotoru ngā tamariki.</p> <p>Tuhia ētahi porowhita e 3. Āta whakaahuangia ki ō koutou hinengaro te tohatoha i ngā porotiti ki ngā porowhita e 3 nei. E hia ka tohaina ki ia porowhita?</p> <p>E 5.</p> <p>Mēnā ka tohaina ētahi porotiti e 5 ki ia porowhita, ka pau katoa ngā porotiti?</p> <p>Kāo. E 2 ka toe mai.</p> <p>I pēhea koutou i mōhio ai?</p> <p>Ki te whakareatia te 3 ki te 5, ka 15. E mōhio ana ahau ki te whakareatanga <math>3 \times 5 = 15</math>. E 2 atu anō, ka 17. Koirā te toenga.</p> <p>He aha te whārite whakawehe?</p> <p><math>17 \div 3 = 5</math>, e 2 te toenga.</p>
<p>Kia pērā anō te mahi mō ētahi atu whakawehenga pēnei i ēnei:</p> <p><math>23 \div 4</math>      <math>18 \div 7</math>      <math>32 \div 5</math>      <math>16 \div 3</math>      <math>21 \div 6</math>      ...</p>	

## Whārite Whakareatanga

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

Whanaketanga | 1a | 1e | 2a | 2e | 3a | 3e | 4a | 4e | 5a |

E ako ana ahau i aku meka whakareatanga matua.

### Rauemi

- Te huinga kāri ‘Whārite Whakareatanga’ (Rauemi Tārua 4-36)

### Ngā tohutohu

Whakaaturia tētahi o ngā kāri, hei tauira:

3
18
6

Ko tā ngā ākonga he tuhi i ngā whārite whakarea me ngā whārite whakawehe 12 e whai pānga ana ki aua tau. Arā:

$$3 \times 6 = \square$$

$$\square \times 6 = 18$$

$$3 \times \square = 18$$

$$6 \times 3 = \square$$

$$\square \times 3 = 18$$

$$6 \times \square = 18$$

$$18 \div 6 = \square$$

$$\square \div 6 = 3$$

$$18 \div \square = 3$$

$$18 \div 3 = \square$$

$$\square \div 3 = 6$$

$$18 \div \square = 6$$



Wāhanga 6

# Ngā Whārangi Tārua



**Kia mōhiotia ai:** Kei te pae ipurangi o [www.nzmaths.co.nz](http://www.nzmaths.co.nz) ēnei rauemi tārua hei tiki atu mā te pouako ina hiahiatia.

## Kāri Tohutau 0 – 10

Te Poutama Tau  
Rauemi Tārua 4–1

0

1

2

Te Poutama Tau

4–1

Te Poutama Tau

4–1

Te Poutama Tau

4–1

3

4

5

Te Poutama Tau

4–1

Te Poutama Tau

4–1

Te Poutama Tau

4–1

6

7

8

Te Poutama Tau

4–1

Te Poutama Tau

4–1

Te Poutama Tau

4–1

9

10

Te Poutama Tau

4–1

Te Poutama Tau

4–1

## Ngaku Tau Hurahura

Te Poutama Tau  
Rauemi Tārua 4-2

Ka taea te whakarahi ake ki te A3. Tapahia ngā wāhangā katoa - te papa muri, te papa mua me ngā ngaku tau. Tapahia ngā rārangi poutū o te papa mua. Whakapirihia ngā wāhangā o runga o te papa muri me te papa mua. Kuhuna téwhi o ngā ngaku tau ki waenganui i te papa mua me te papa muri. Ka taea ngā tirepa o te papa mua te hiki ake kia kitea ai ngā tau ki raro iho.



Papa muri:



Te Poutama Tau  
4-2

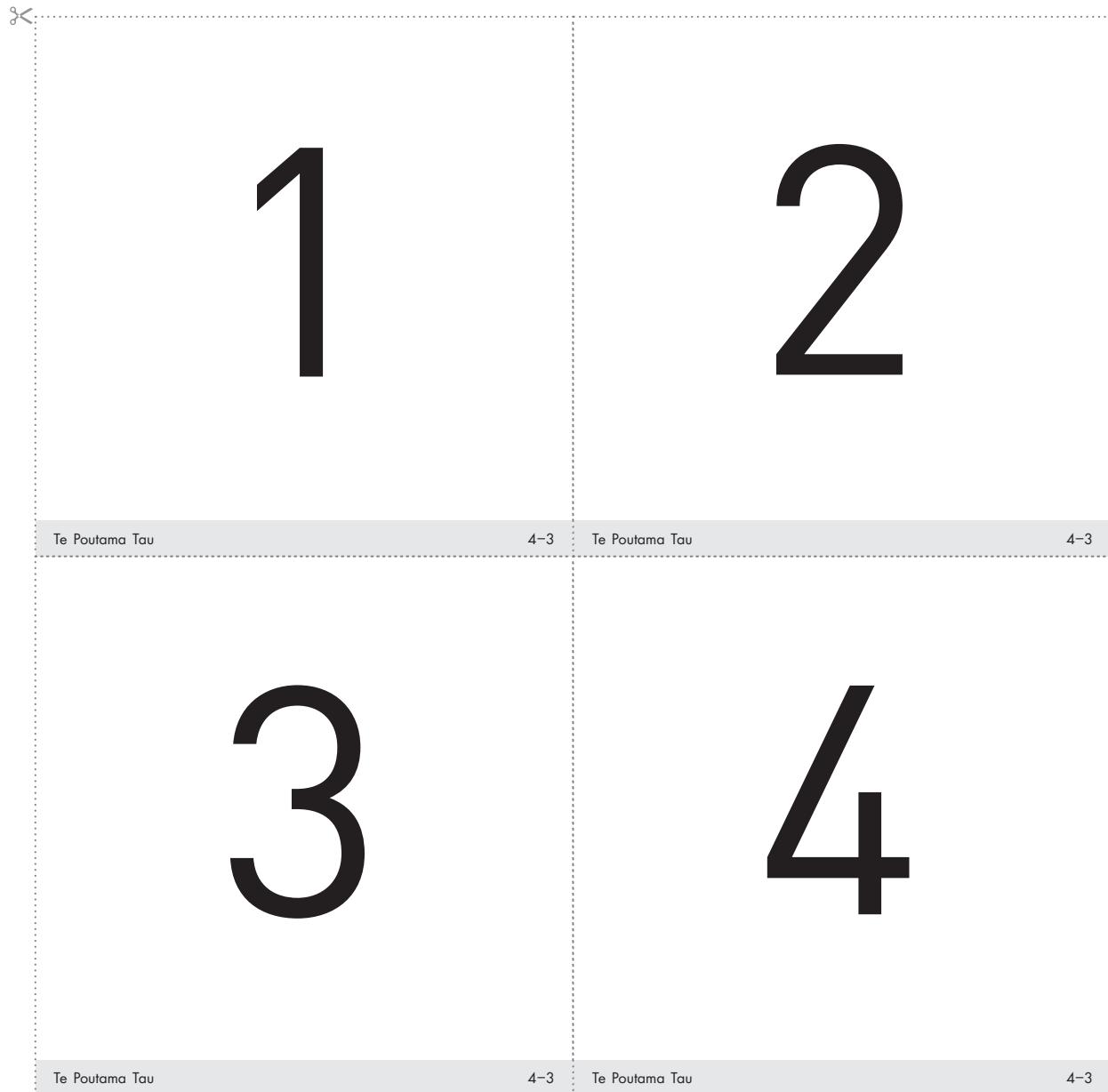
Papa mua:

Te Poutama Tau  
4-2

1      2      3      4      5      6      7      8      9      10

11	12	13	14	15	16	17	18	19	20
14	15	16	17	18	19	20	21	22	23
25	26	27	28	29	30	31	32	33	34
30	31	32	33	34	35	36	37	38	39
44	45	46	47	48	49	50	51	52	53
49	50	51	52	53	54	55	56	57	58

Ka taea te whakarahi ake ki te A3.



5

6

7

8

9

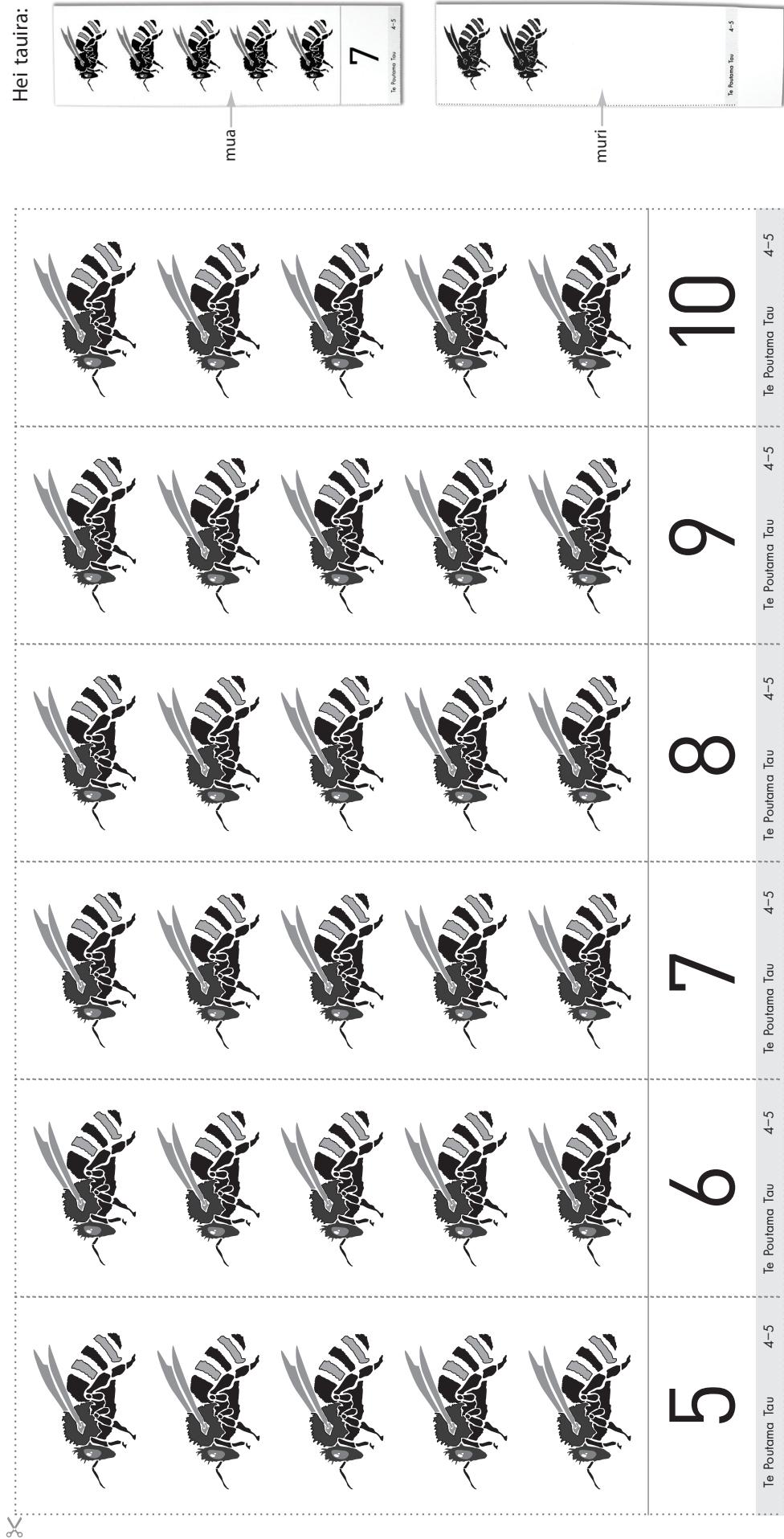
0

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Ngaku Pī Huripoki

Te Poutama Tau  
Rauemi Tārua 4–5

Whakaahuangia ngā whārangī e rua, ka tapahi ai i ngā rarawhi. Whakapiria ngā pī ki muri o te ngaku 5, kia kotahi te pī ki muri o te ngaku 6, kia 2 ngā pī ki muri o te ngaku 7, kia 3 ngā pī ki muri o te ngaku 8, kia 4 ngā pī ki muri o te ngaku 9, kia 5 ki muri o te ngaku 10.



## Ngaku Pi Huripoki

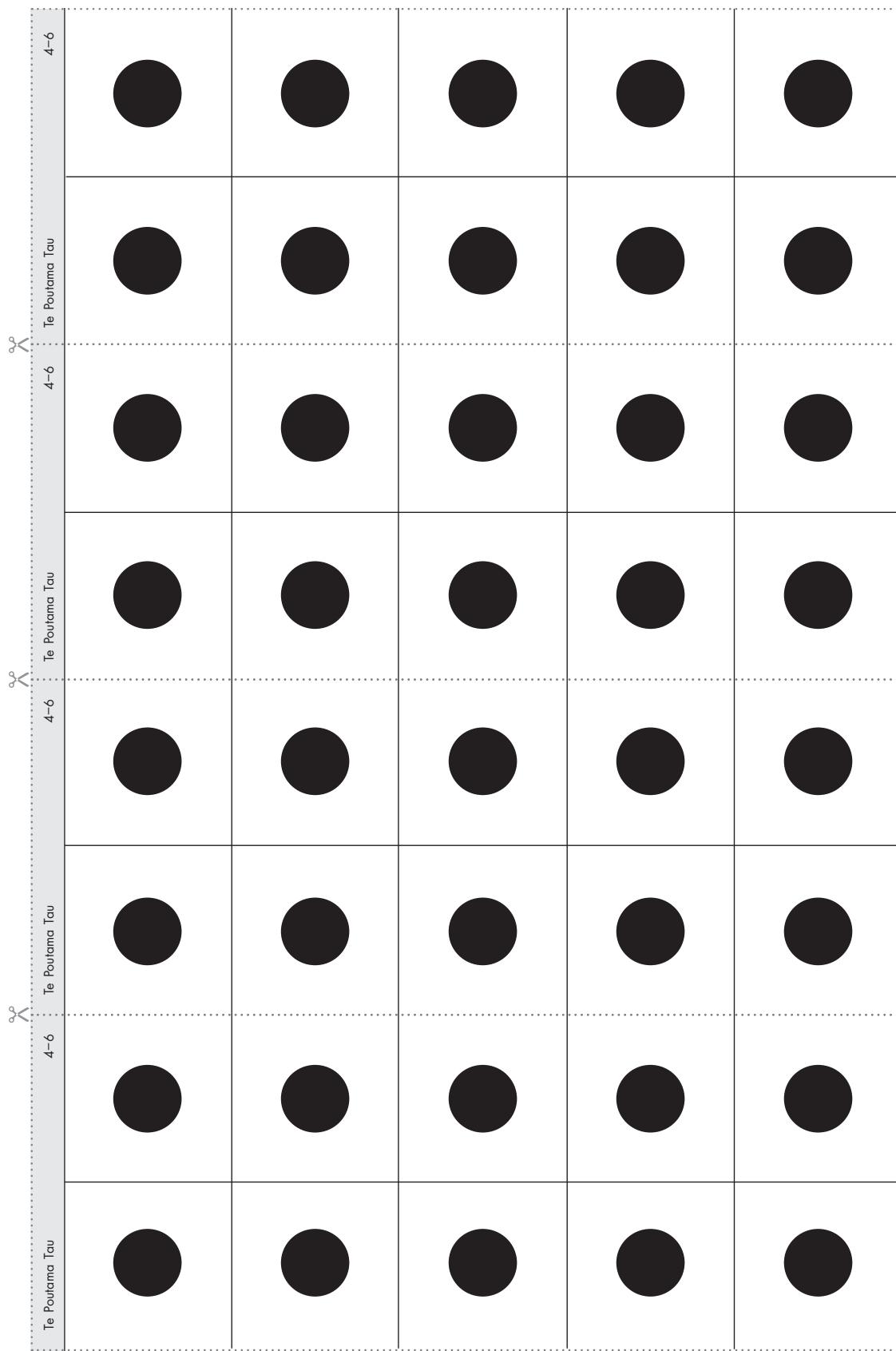
Te Poutama Tau  
Rauemi Tārua 4–5



## Anga Tekau

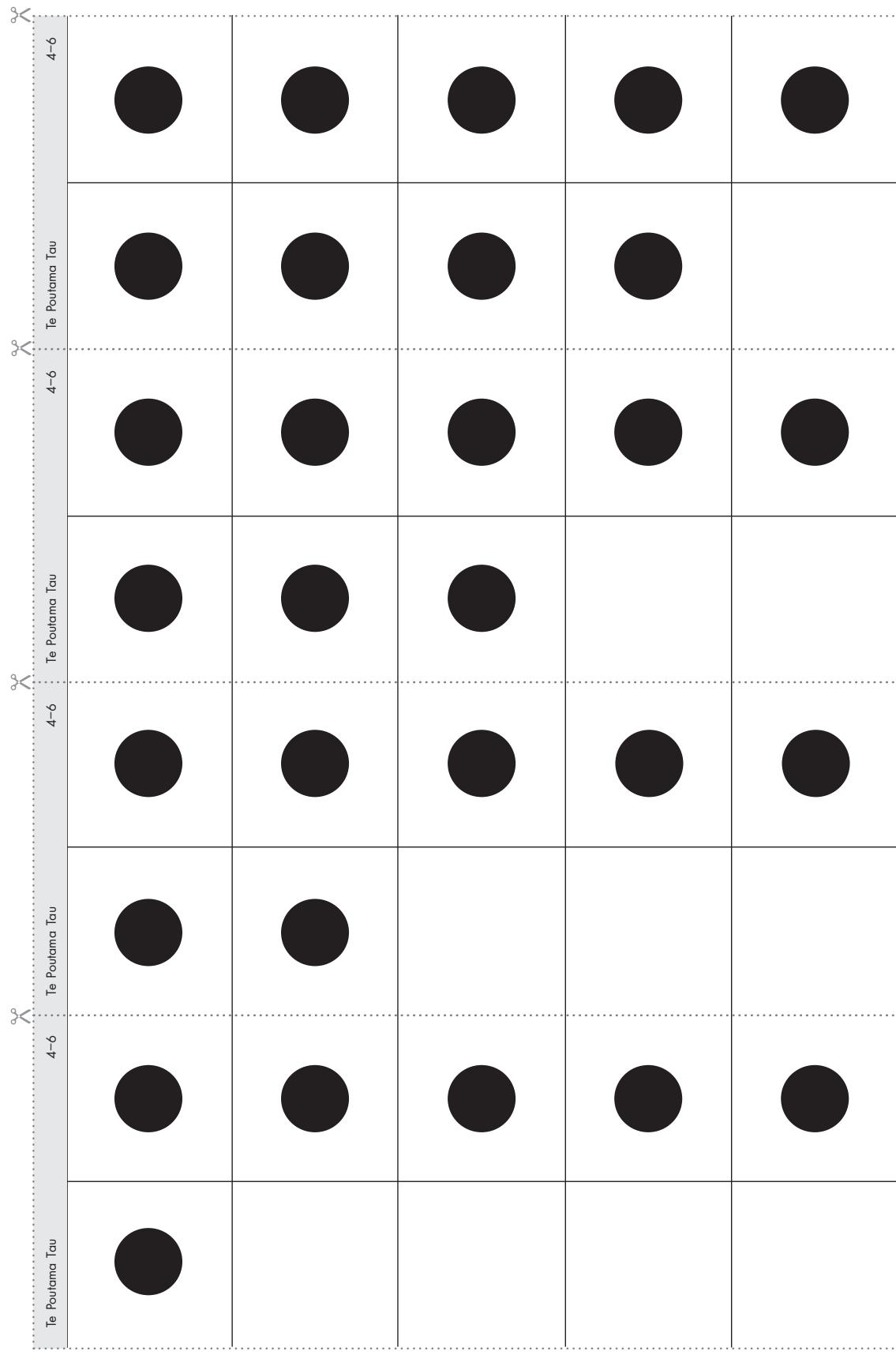
Te Poutama Tau  
Rauemi Tārua 4–6

Whakaahuangia ngā whārangi nei ki te kāri, ka tapahi ai:



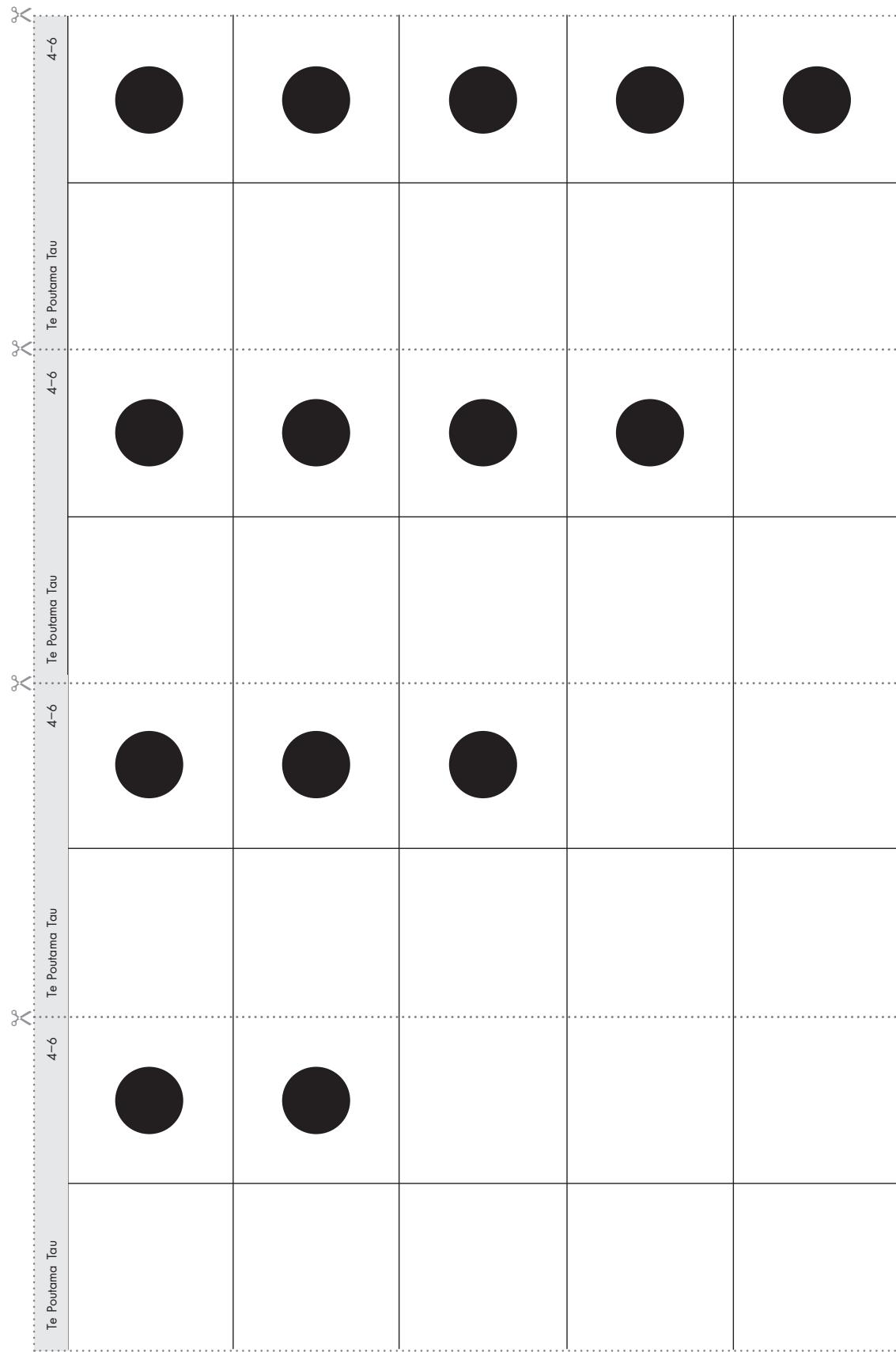
## Anga Tekau

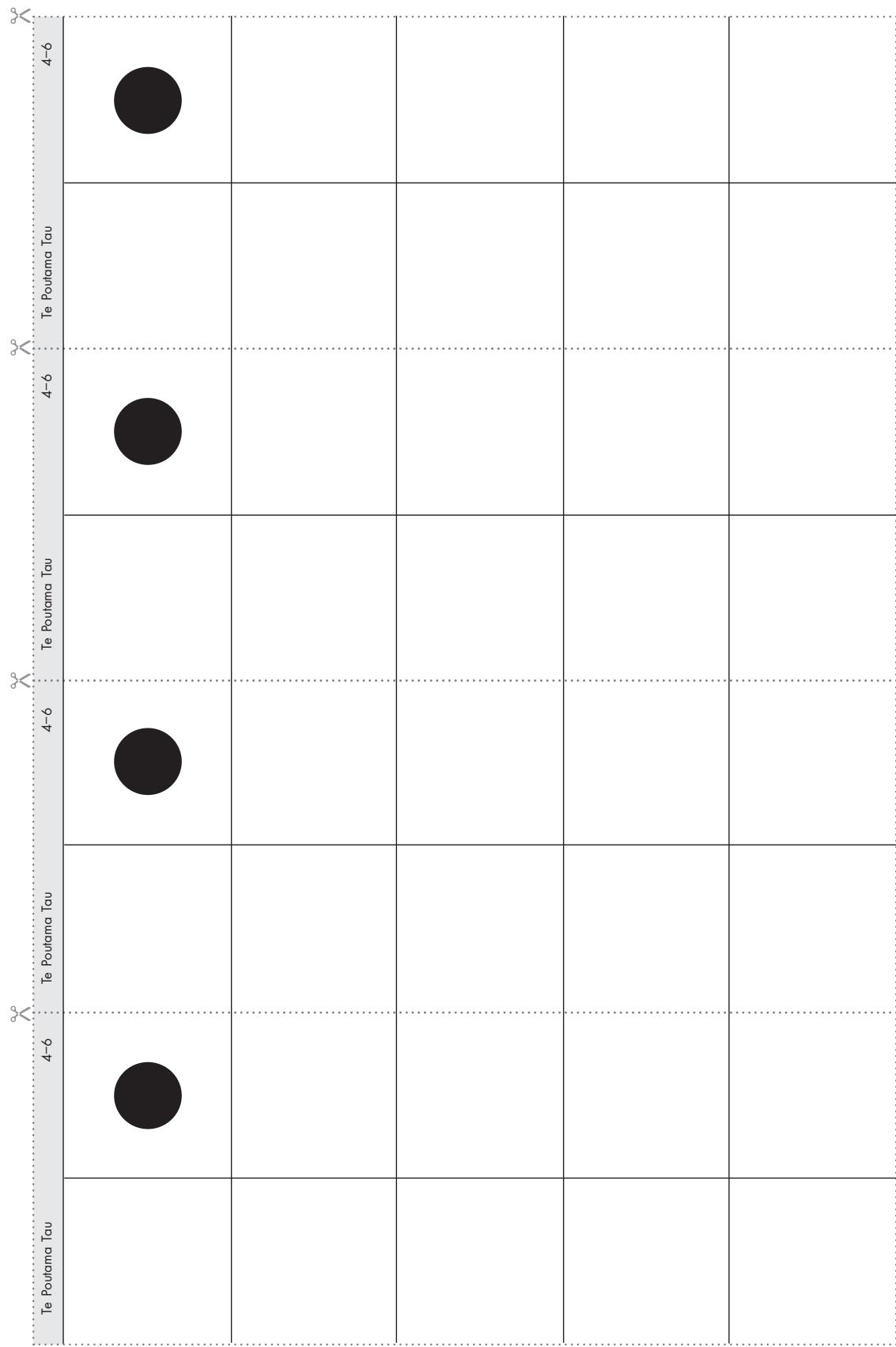
Te Poutama Tau  
Rauemi Tārua 4–6



## Anga Tekau

Te Poutama Tau  
Rauemi Tārua 4–6





## Anga Tekau

Te Poutama Tau  
Rauemi Tārua 4–6



Whakaahuangia, ka tapahi ai. Whakapiria ngā whārangī ki te taha maū hei pukapuka.

Te Pukamano

Te Poutama Tau  
Rauemi Tārua 4-7



## Te Pukamano

Te Pourama Tau  
Rauemi Tārua 4-7

605	623	619	630	650	667	671	685	699	701	718	735	742	761	773	790	795
4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7	4-7

Te Pukamano

Te Poutama Tau  
Rauemi Tārua 4-7

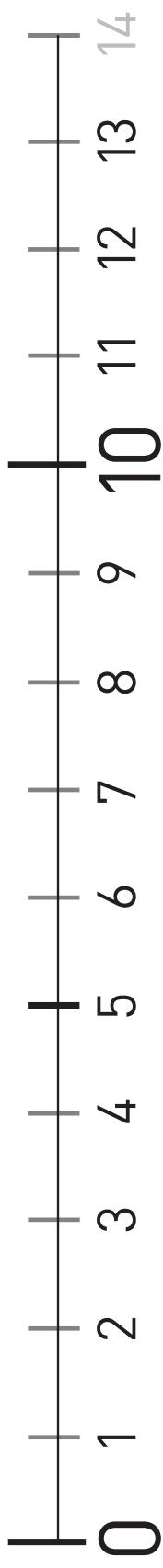
## Rārangi Tau Nui

Te Poujama Tau  
Rauemi Tārua 4–8

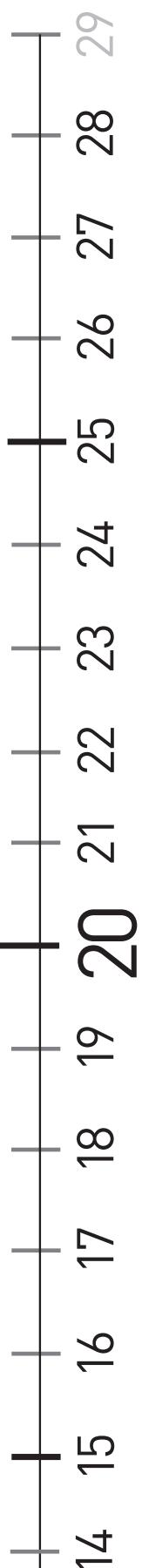
Hei tauira:



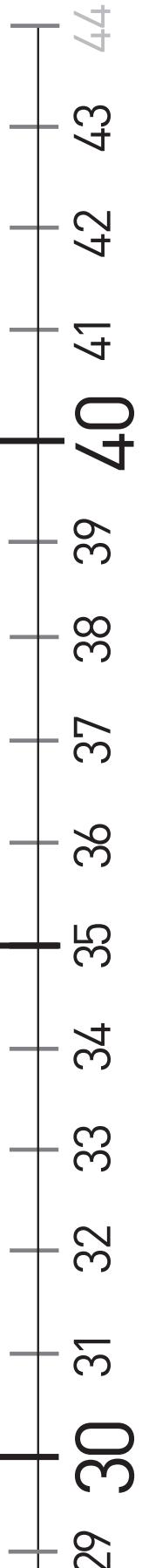
Te Poujama Tau 4–8



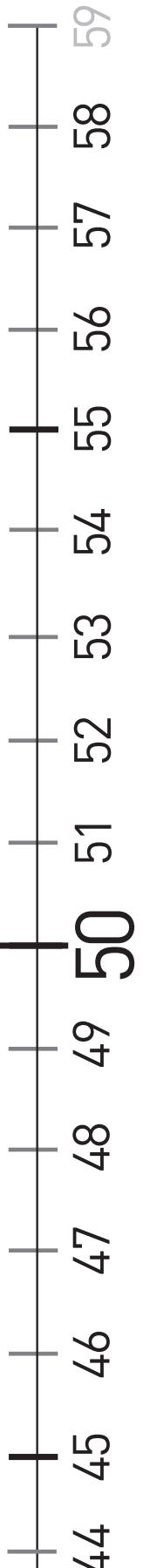
Te Poujama Tau 4–8



Te Poujama Tau 4–8



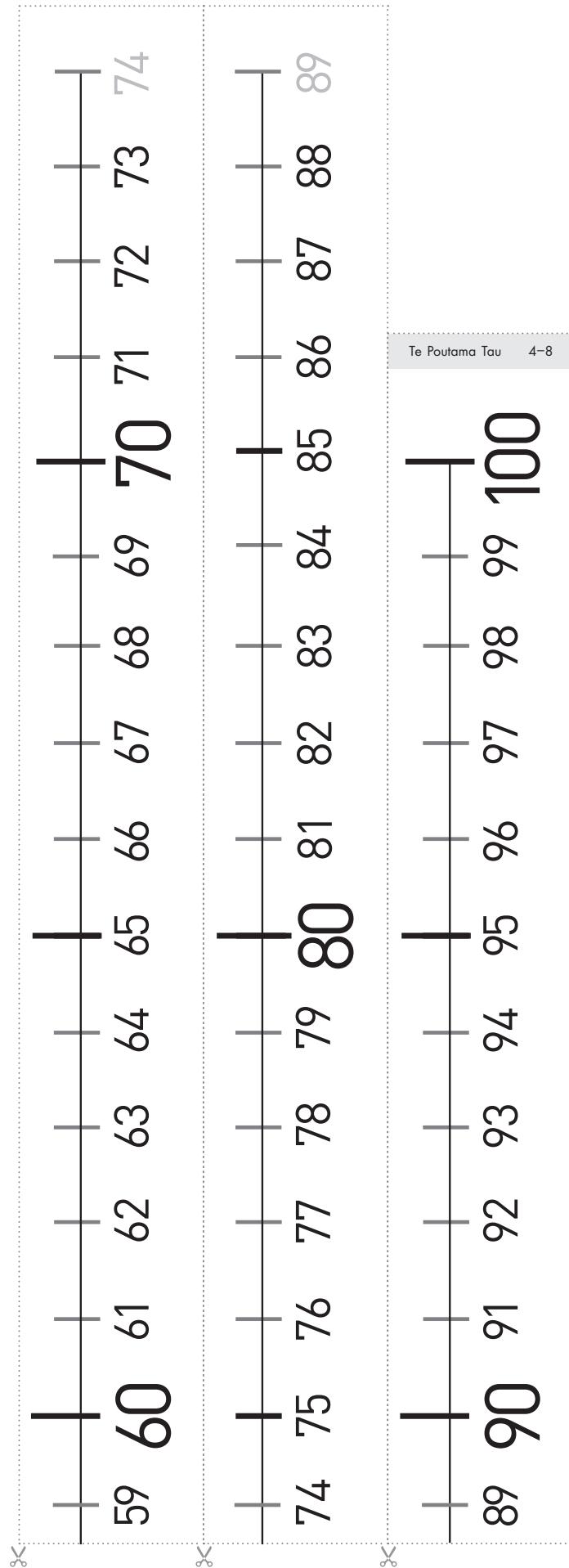
Te Poujama Tau 4–8

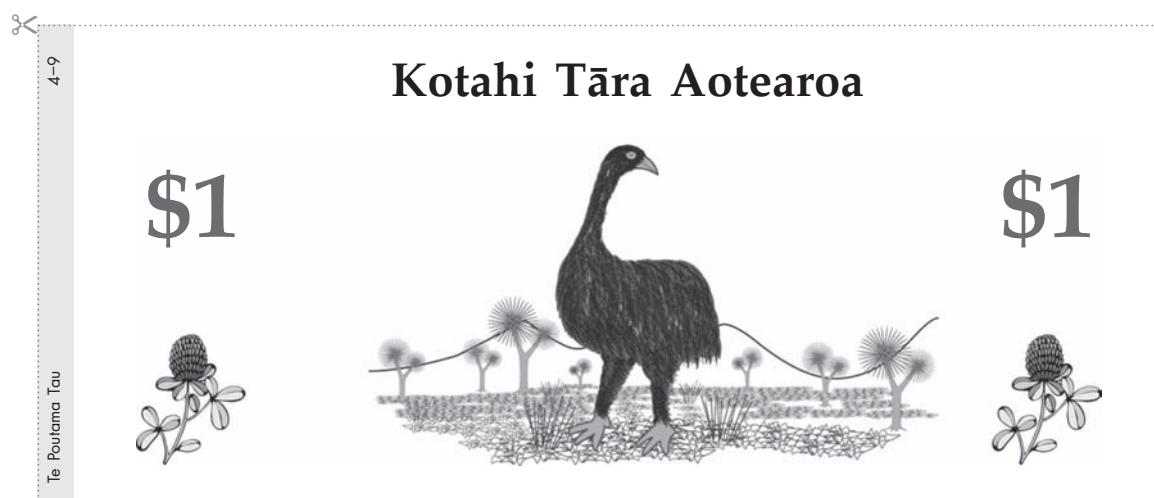
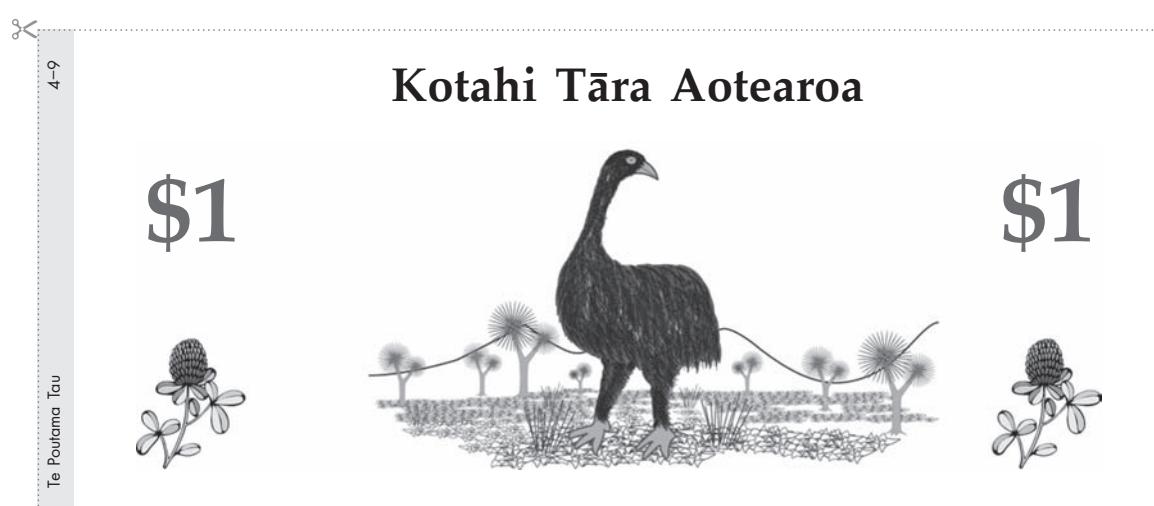
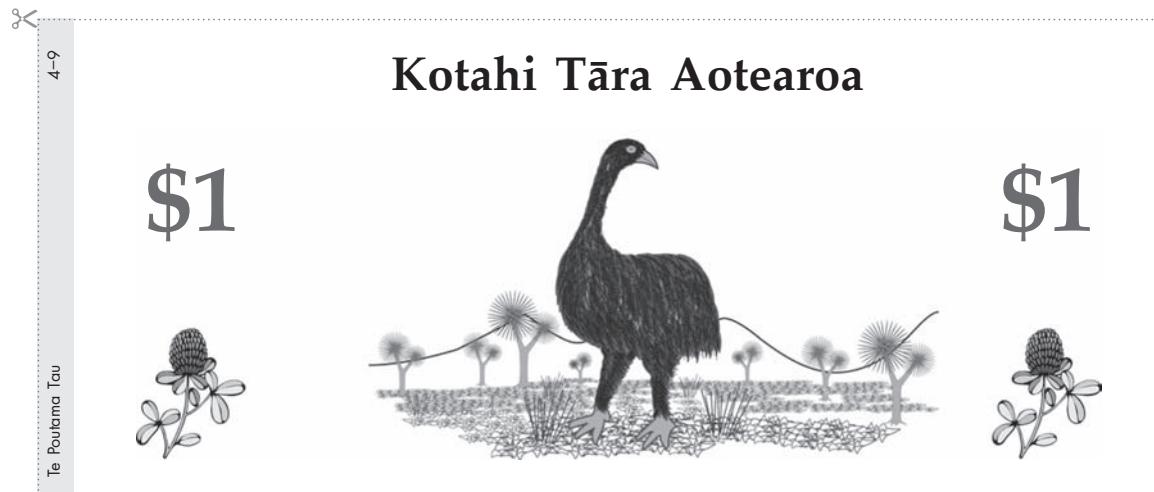


Te Poujama Tau 4–8

## Rārangi Tau Nui

Te Poutama Tau  
Rauemi Tārua 4–8





Moni Tākaro

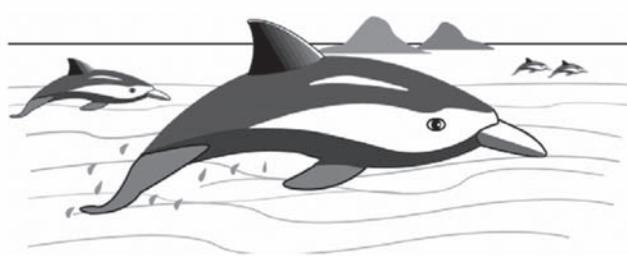
Te Poutama Tau  
Rauemi Tārua 4–9



4–9

\$10

## Tekau Tāra Aotearoa



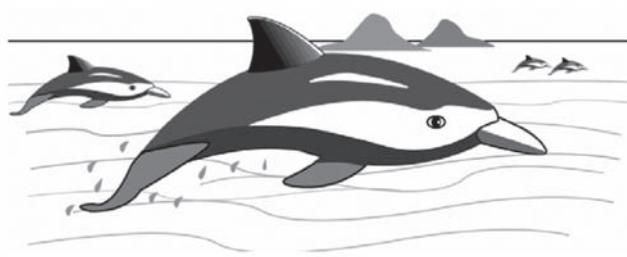
\$10



4–9

\$10

## Tekau Tāra Aotearoa



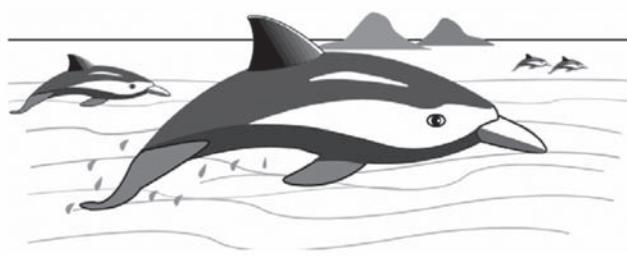
\$10



4–9

\$10

## Tekau Tāra Aotearoa



\$10

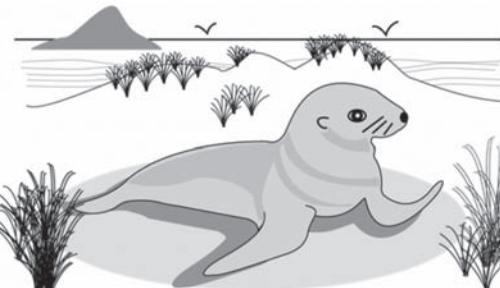


4-9

Te Poutama Tau

\$100

## Kotahi Rau Tāra Aotearoa



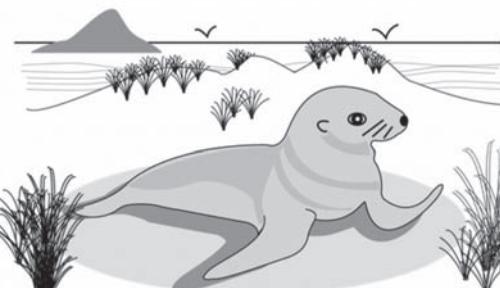
\$100

4-9

Te Poutama Tau

\$100

## Kotahi Rau Tāra Aotearoa



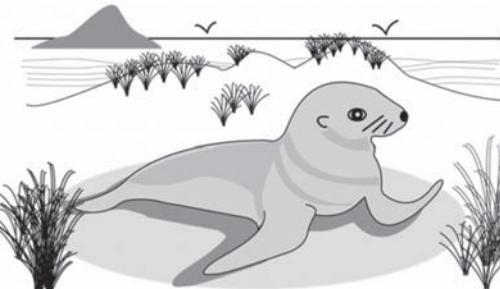
\$100

4-9

Te Poutama Tau

\$100

## Kotahi Rau Tāra Aotearoa



\$100



4–9

## Kotahi Mano Tāra Aotearoa

\$1,000                          \$1,000



4–9

## Kotahi Mano Tāra Aotearoa

\$1,000                          \$1,000

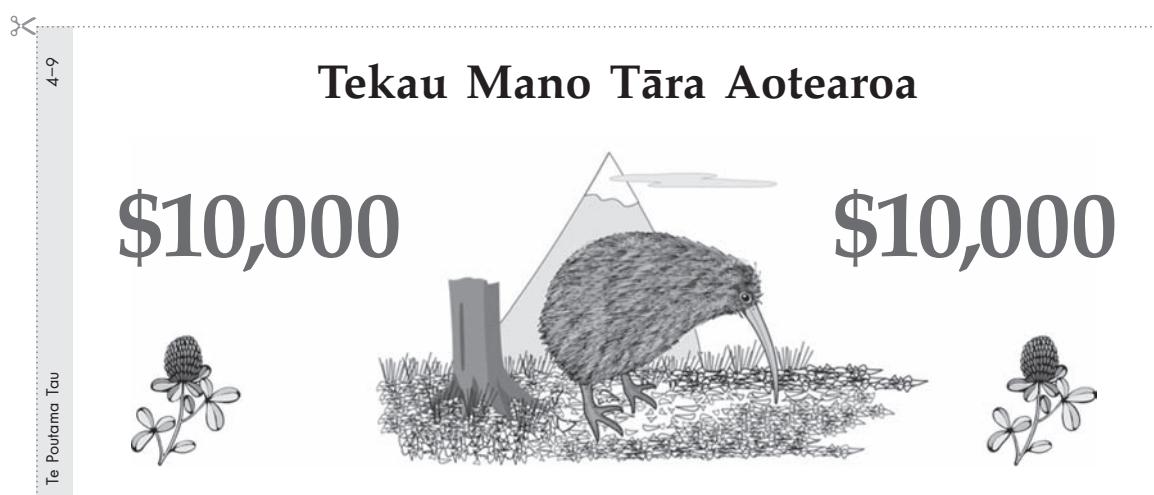
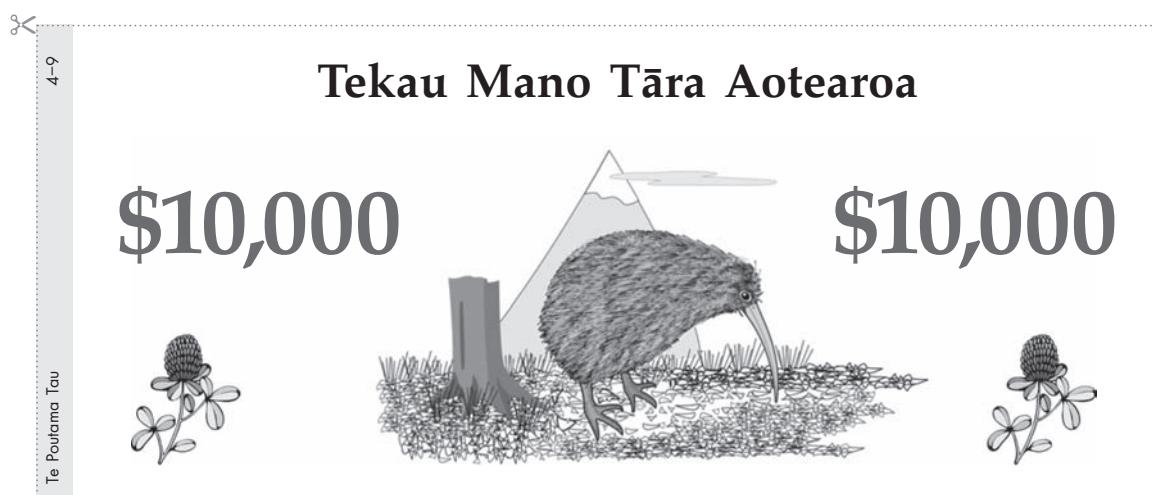
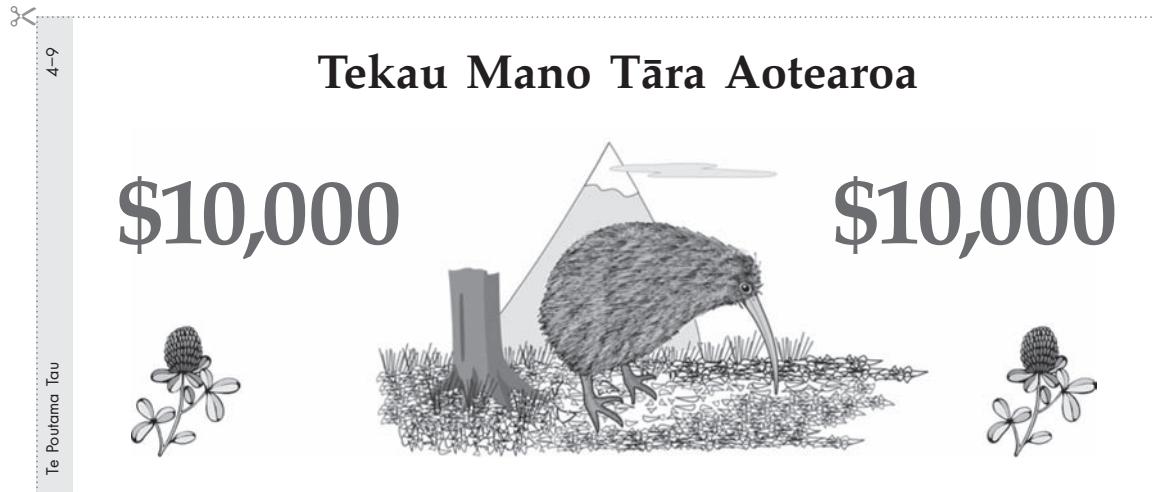


4–9

## Kotahi Mano Tāra Aotearoa

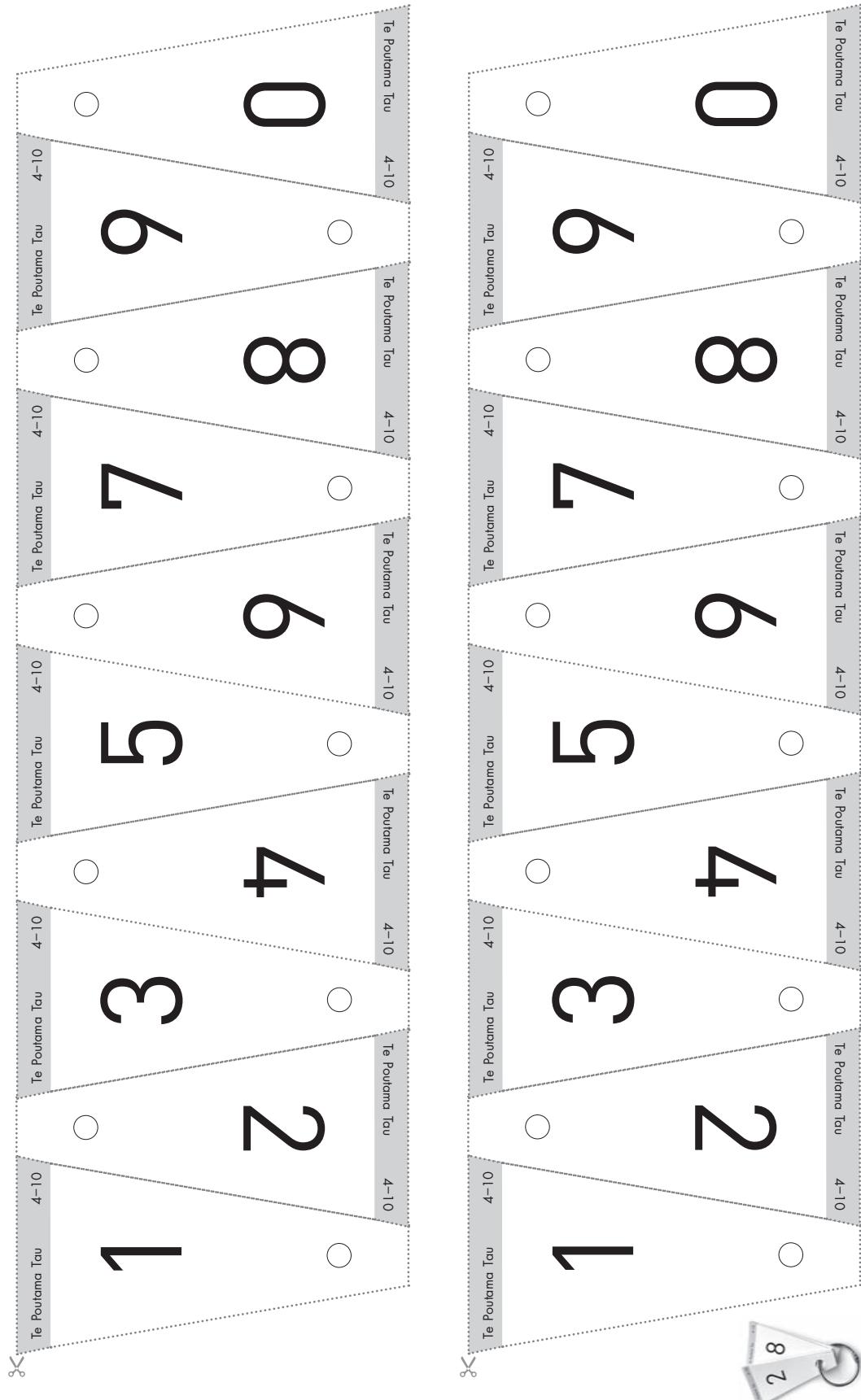
\$1,000                          \$1,000





## Kōwhiuwhiu Tau

Te Poutama Tau  
Rauemi Tārua 4–10



Whare Uara Tū

Whakahuangia ngā Whare Uara Tū, ka tappahi ai. Whakapiria ngā whare, tētahi ki teaha o tētahi:

Where Meruya		Where Maro		Where Matemba	
tu minima	teku minima	tuu mano	tekau mano	kotahi mano	tau
					tau
					tau

Whare Mātāmua

Whare Mātāmua	
rau 100	tekau 10
tahi 1	tahi 1

\* \* \*

## Whare Uara Tū

Te Poutama Tau  
Rauemi Tārua 4-11

### Whare Mano

rau	100,000
tahi	1,000

Te Poutama Tau

4-11

## Whare Uara Tū

Te Poutama Tau  
Rauemi Tārua 4-11

## Whare Miriona

rau	tekau	tahi
100,000,000	10,000,000	1,000,000

4-11

Te Poutama Tau

## Whare Uara Tū

Te Poutama Tau  
Rauemi Tārua 4-11

### Whare Piriona

rau	100,000,000,000
tahi	1,000,000,000

Te Poutama Tau

4-11

## Whare Uara Tū

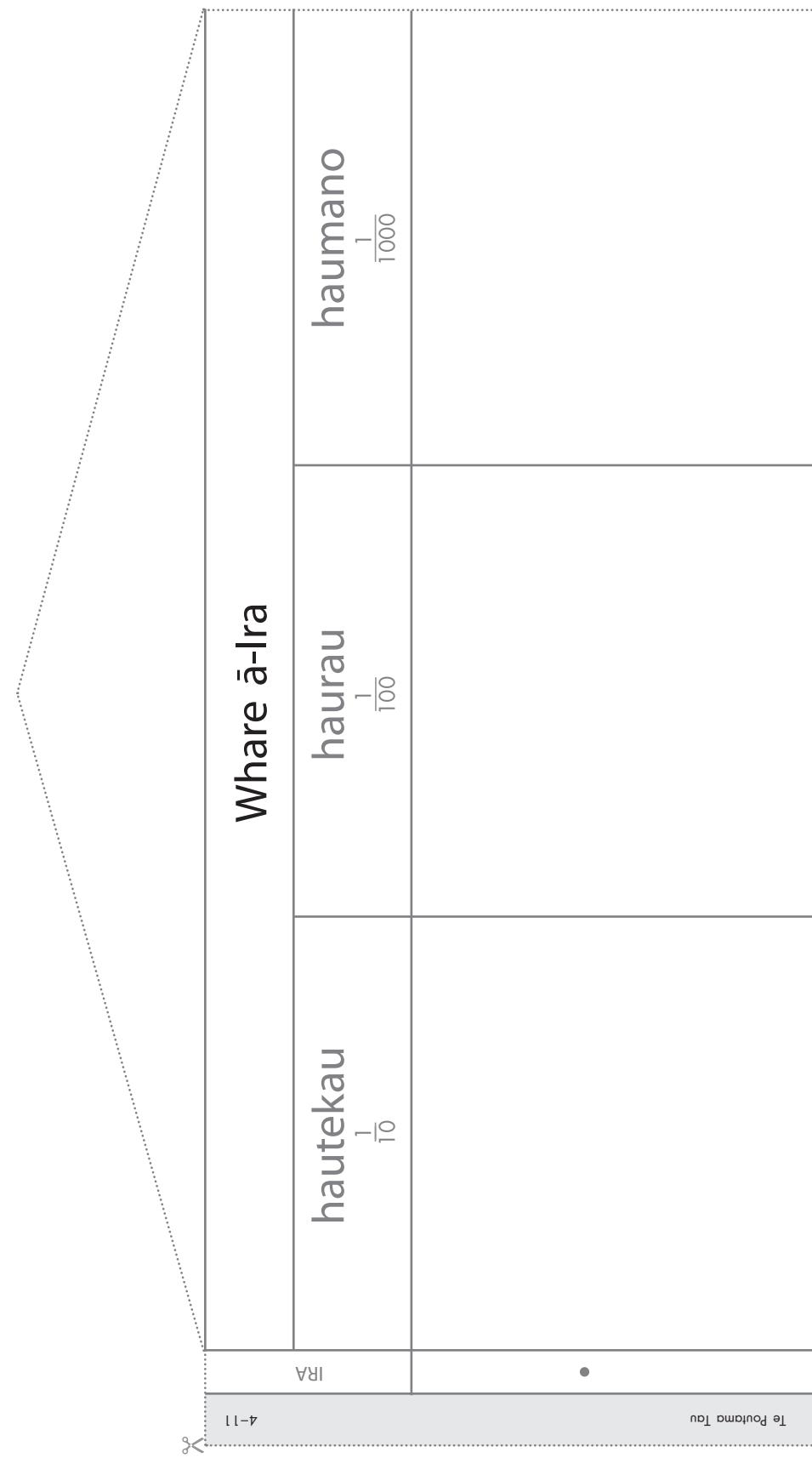
Te Pouitama Tau  
Rauemi Tārua 4-11

## Whare Tīriona

rau	tekau	tahi
100,000,000,000	10,000,000,000,000	1,000,000,000,000,000

4-11

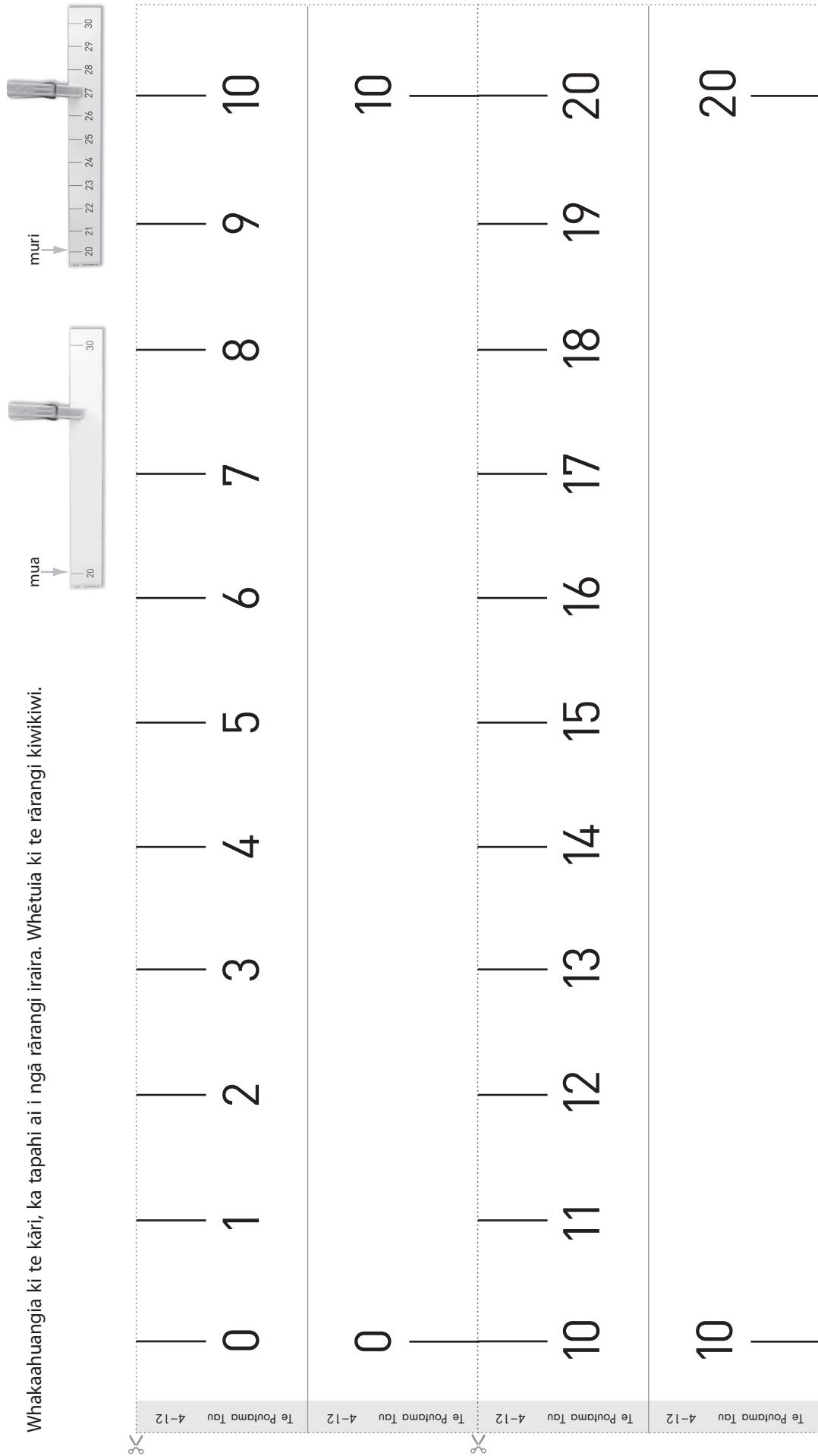
Te Pouitama Tau



## Rārangi Tau Whātea

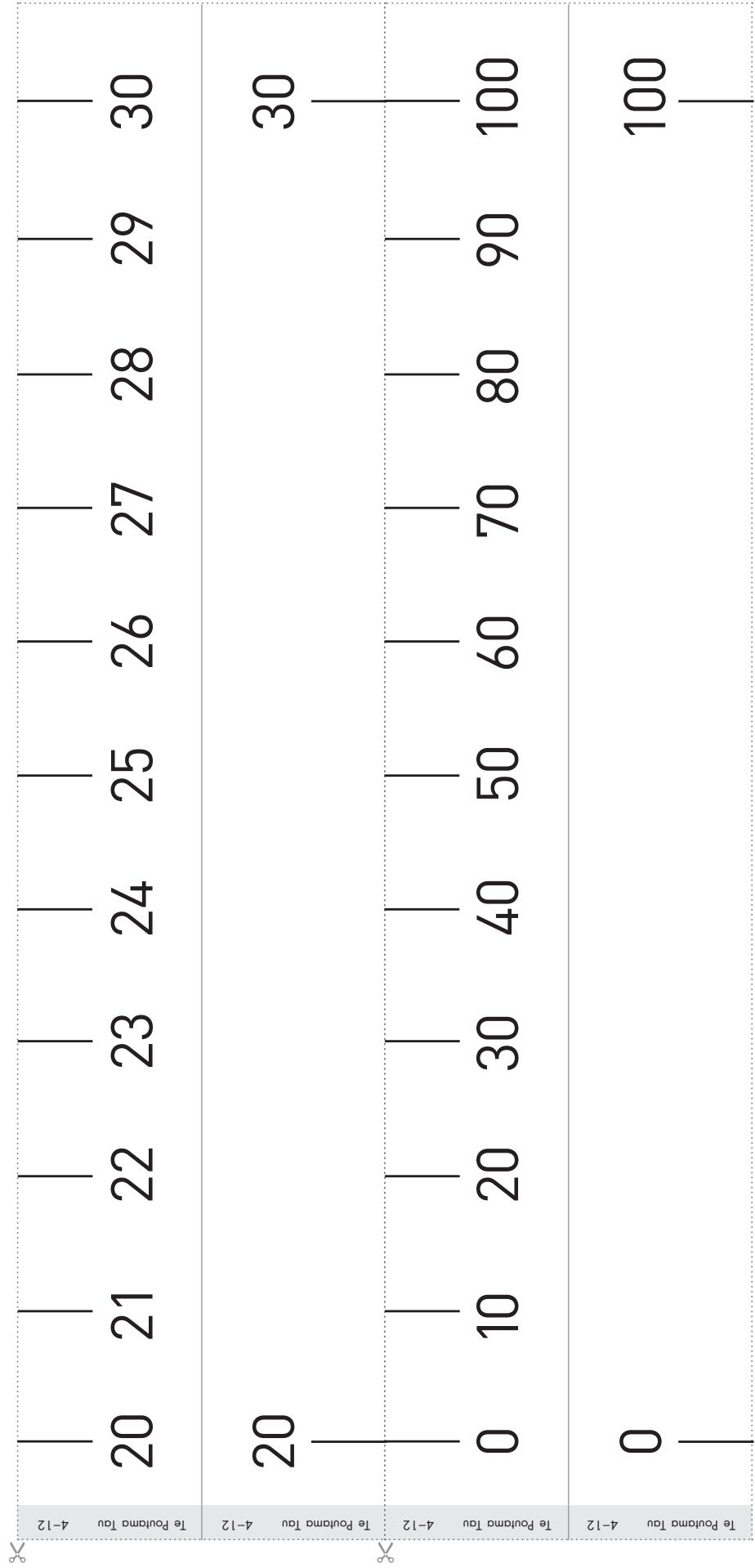
Te Pouitama Tau  
Rauemi Tārua 4–12

Whakaahuangia ki te kāri, ka tapahi ai i ngā rārangi iraira. Whētuia ki te rārangi kiwīkiwi.



## Rārangi Tau Whātea

Te Poutama Tau  
Rauemi Tārua 4-12

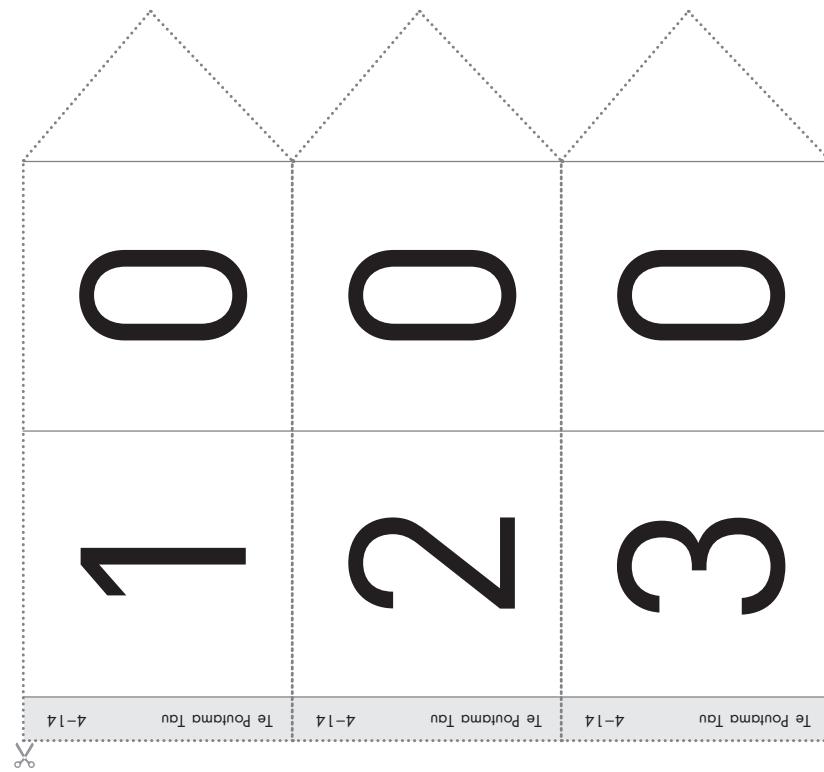
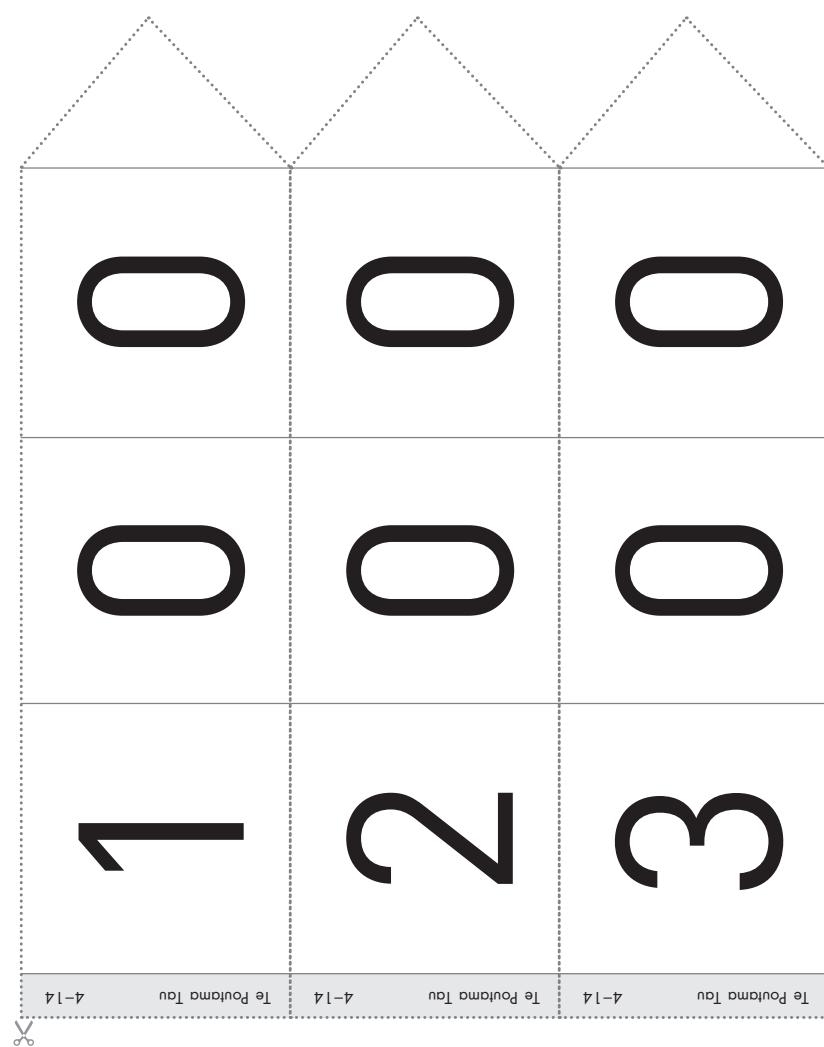


## Whāriki Tohutau

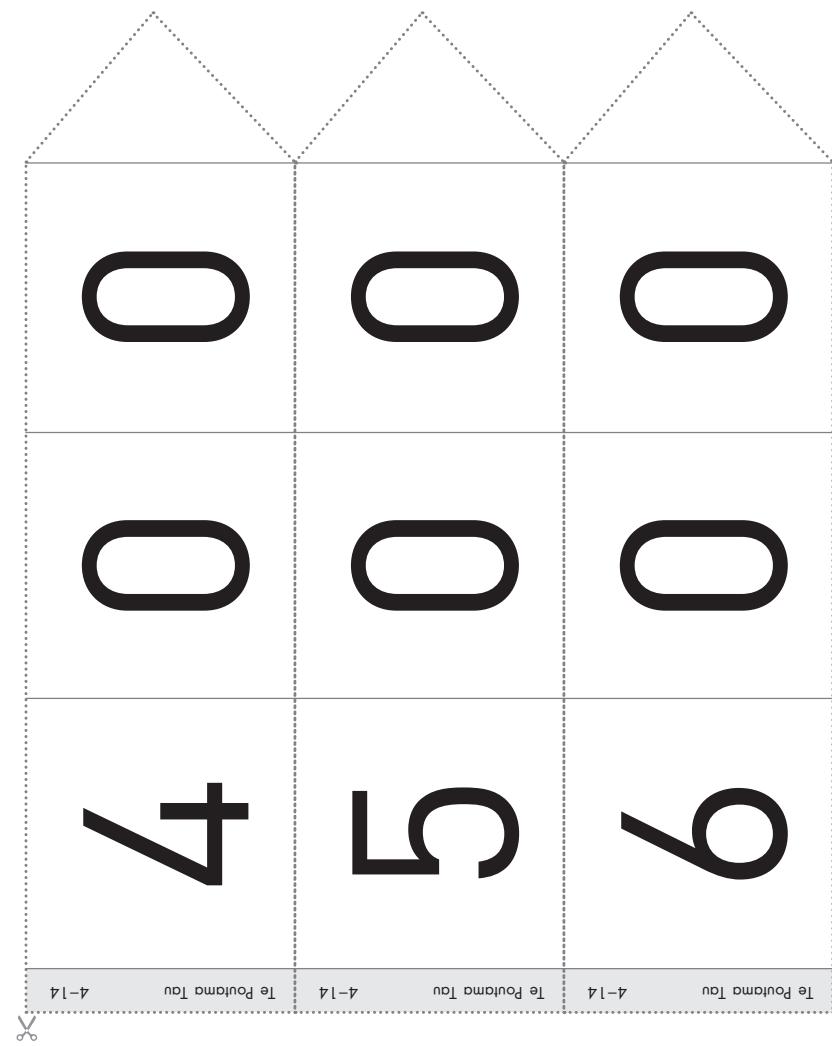
Te Poutama Tau  
Rauemi Tārua 4–13

He tauira tēnei o te Whāriki Tohutau. Whakarahia ake ki runga papanga, kirihi rānei, kia 1.5m mā te 1.5m te rahi. Peitatia rānei ki te papa tākaro o te kura. Ka taea te whakarahi ake ki te A3, hei mahi takirua mā ngā ākonga.

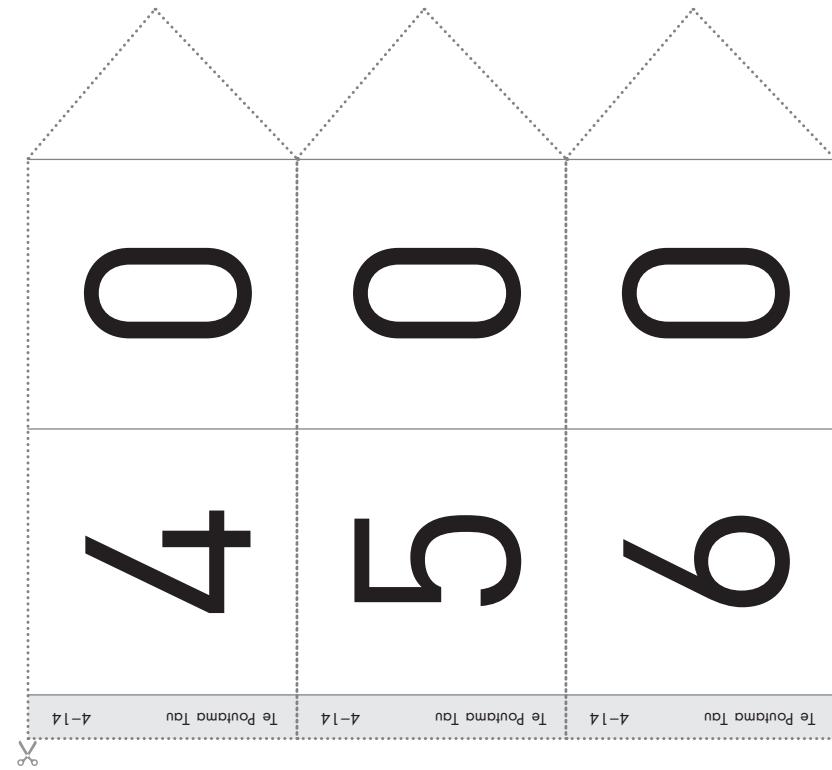




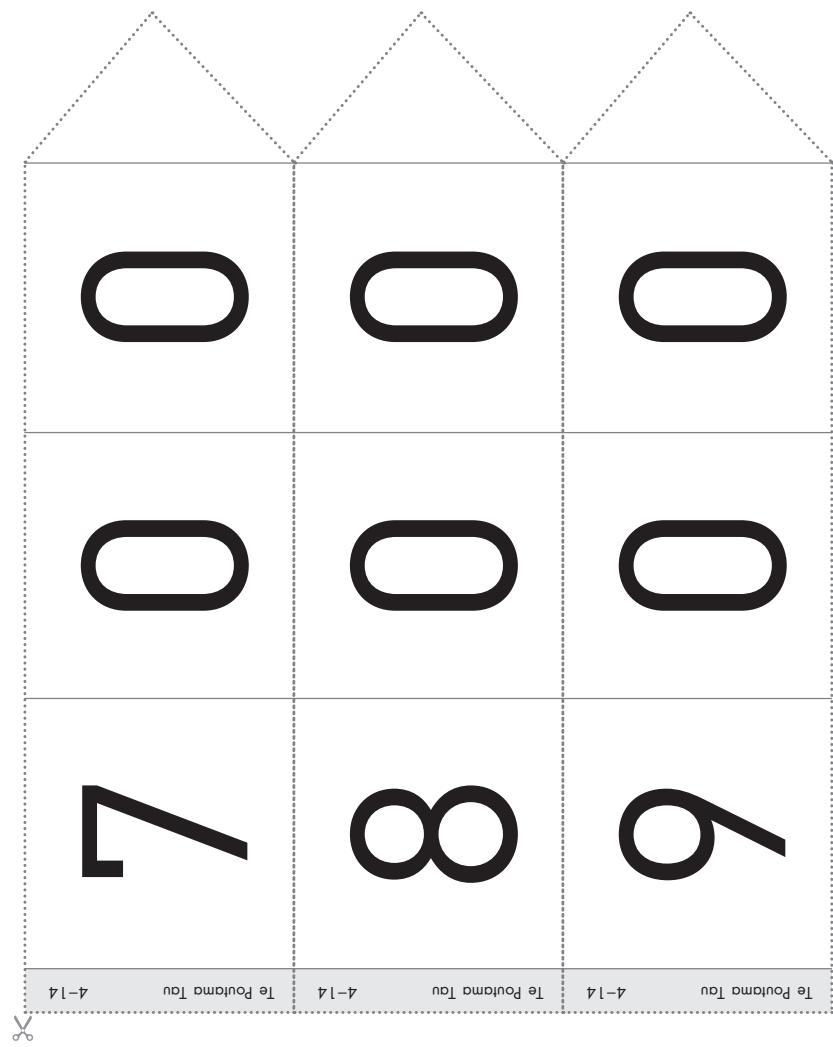
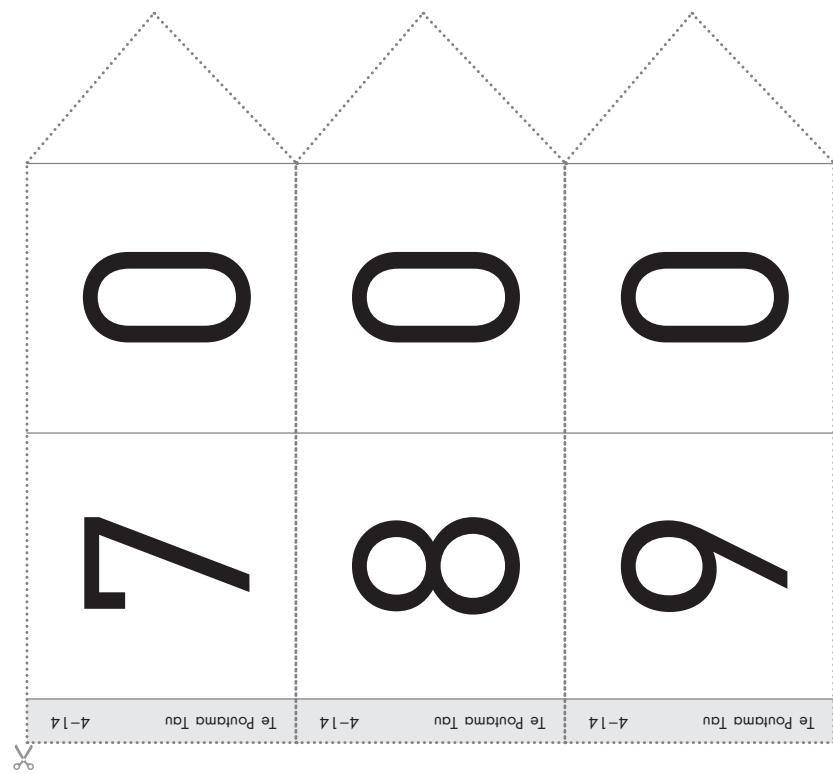
## Kāri Pere



Te Pouitama Tau  
Rauemi Tārua 4-14

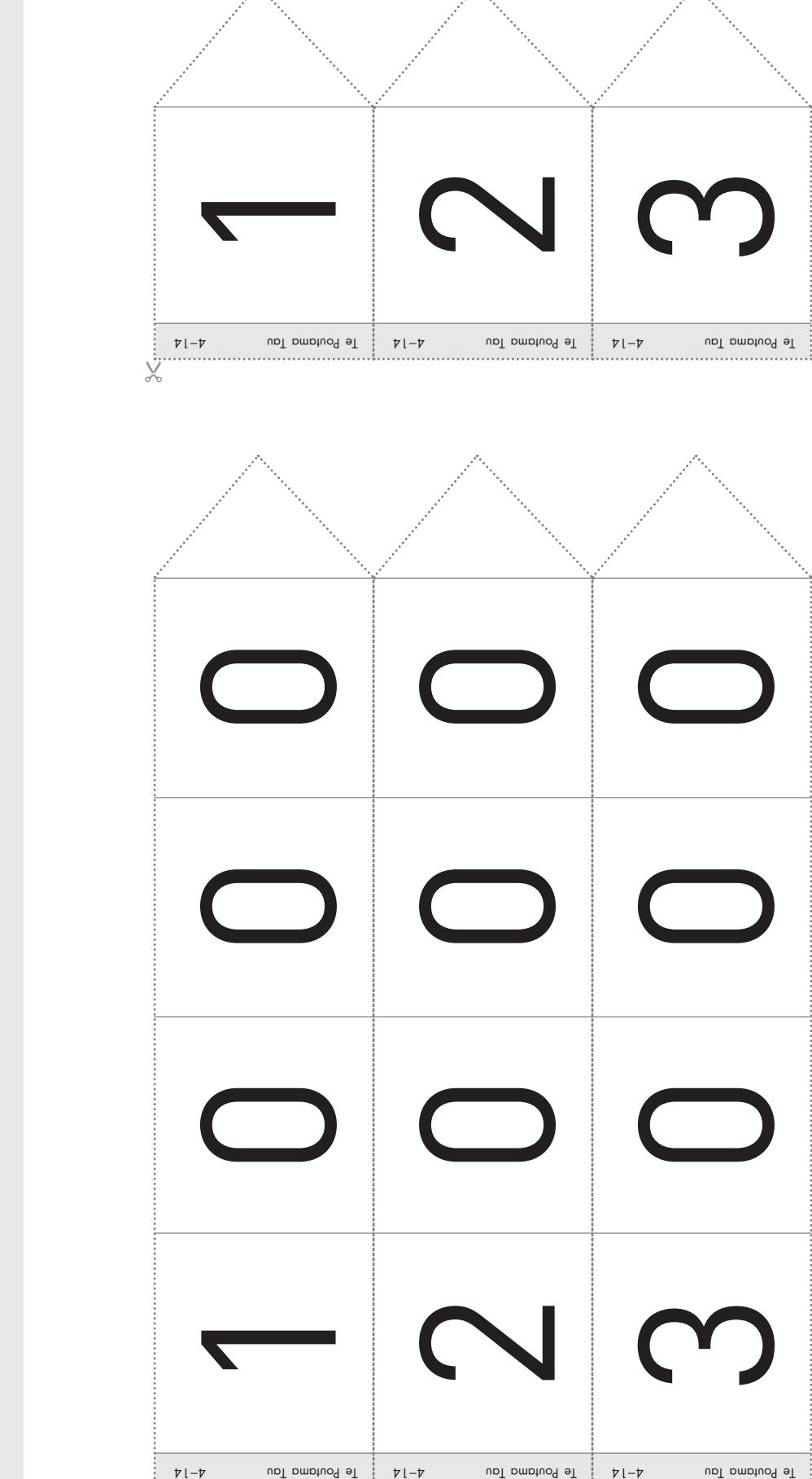
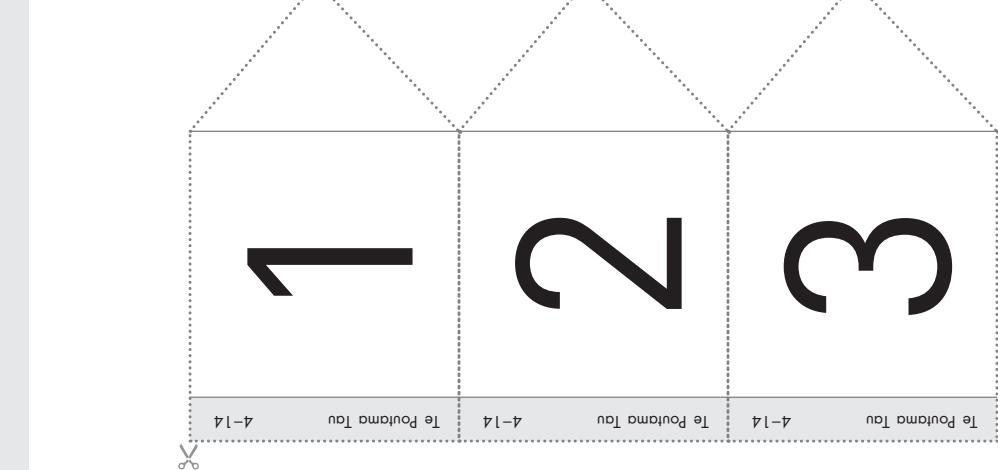


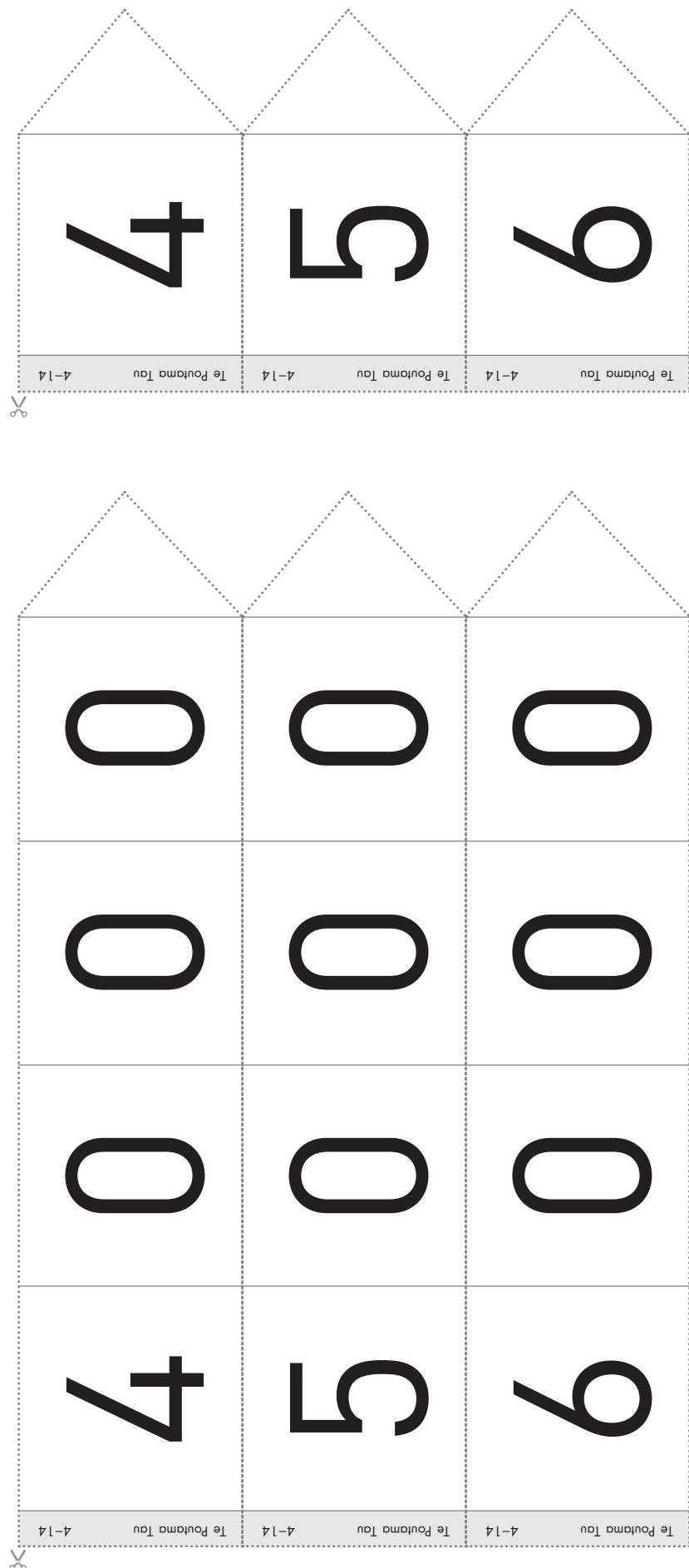
Te Pouitama Tau  
Rauemi Tārua 4-14



## Kāri Pere

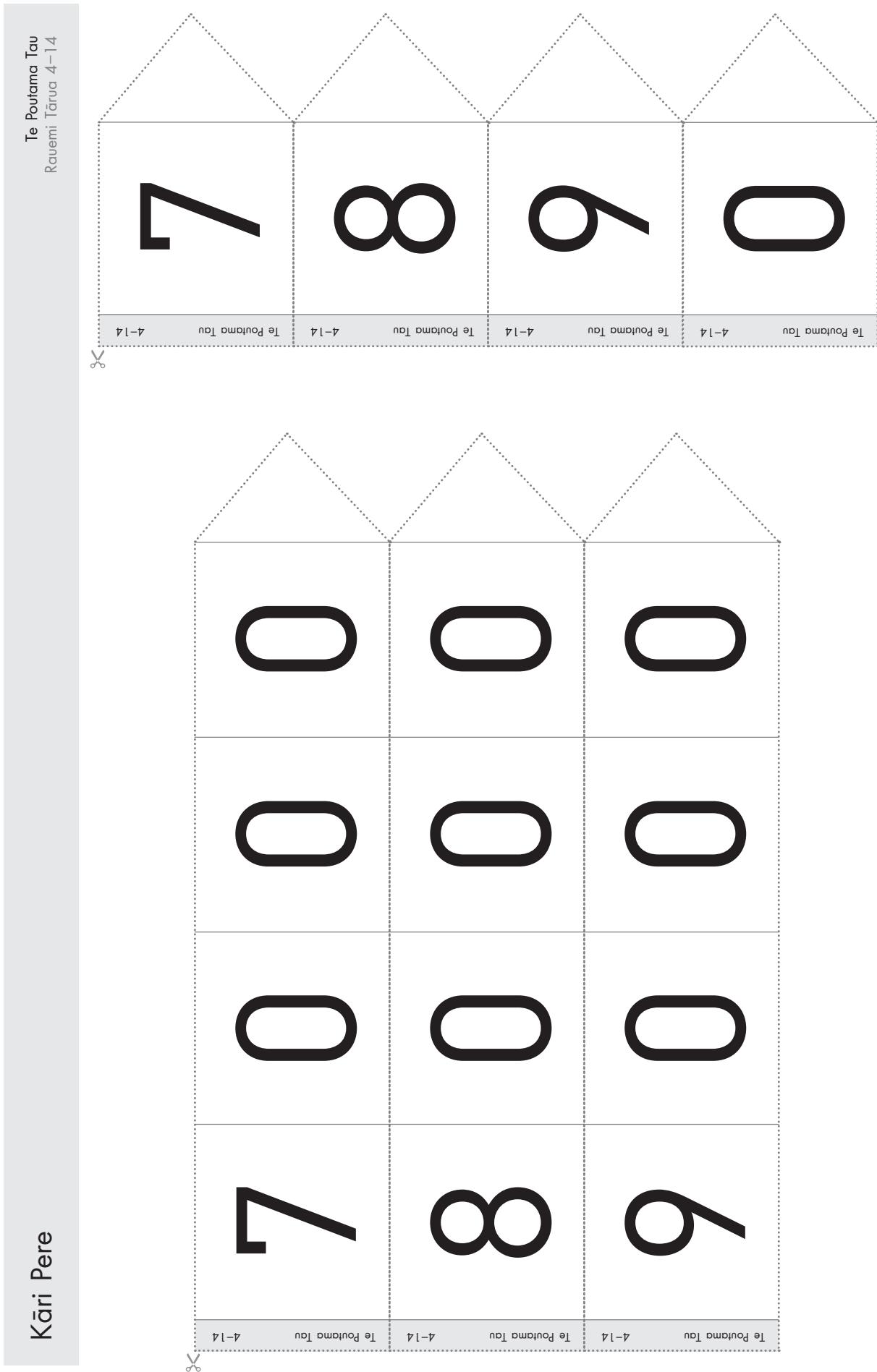
Te Pouitama Tau  
Rauemi Tārua 4–14





## Kāri Pere

Te Pouitama Tau  
Rauemi Tārua 4–14



mano	rau	tekau	tahi
9	9	9	9
8	8	8	8
7	7	7	7
6	6	6	6
5	5	5	5
4	4	4	4
3	3	3	3
2	2	2	2
1	1	1	1
0	0	0	0

rau (100)	tekau (10)	tahi (1)	•	hautekau $(\frac{1}{10})$	haurau $(\frac{1}{100})$	haumano $(\frac{1}{1000})$
9	9	9	•	9	9	9
8	8	8	•	8	8	8
7	7	7	•	7	7	7
6	6	6	•	6	6	6
5	5	5	•	5	5	5
4	4	4	•	4	4	4
3	3	3	•	3	3	3
2	2	2	•	2	2	2
1	1	1	•	1	1	1
0	0	0	•	0	0	0

1	2	3	4	5
6	8	9	10	12
15	16	18	20	24
25	27	30	32	36
40	45	48	50	54
60	64	72	75	80
90	96	100	108	120
125	144	150	180	216

## He Ara Paheko Tau

Te Poutama Tau  
Rauemi Tārua 4-17

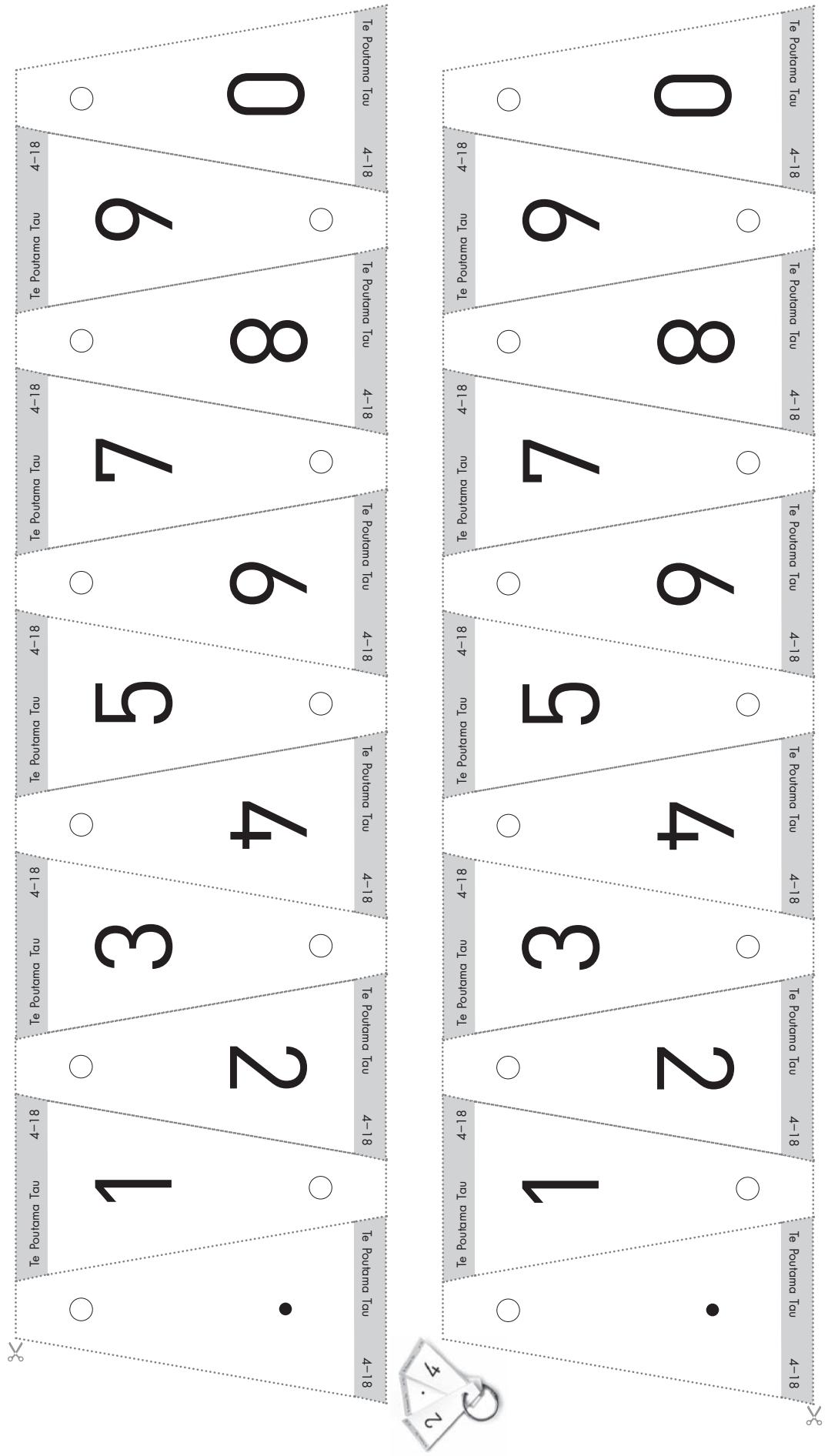
Te Pouatama Tau	4-17a	Te Pouatama Tau	4-17a	Te Pouatama Tau
Tāpiria te 0.8				Whakaweheha ki te 2
2.0				2.15
Whakaweheha ki te 4				Kotahi haurima o tēnei
0.5				0.43
Whakareatia ki te 0.2				Tāpiria te 0.17
0.10				0.6
Hauruatia tēnei				Tangohia te $\frac{1}{2}$ o te $\frac{4}{5}$
0.05				0.2
Tangohia te 0.005				Whakareatia ki te 3.3
0.045				0.66
Whakareatia ki te 100				Tangohia te 0.07

## He Ara Paheko Tau

Te Poutama Tau  
Rauemi Tārua 4–17

4.5			0.59	
0.9			0.25	
Tāpiria te $\frac{2}{10}$			Whakareatia ki te 4	
1.1			1.0	
Tangohia te 0.7			Whakareatia ki te 1.5	
0.4			1.5	
Whakareatia ki te 7			Whakareatia ki te 4	
2.8			6	
Tāpiria te 1.5			Whakawehea ki te kotahi hautekau ( $\frac{1}{10}$ )	
4.3			60	
Te Mutunga			Te Mutunga	

v Kōwhiuwhiu Tau ā-Ira

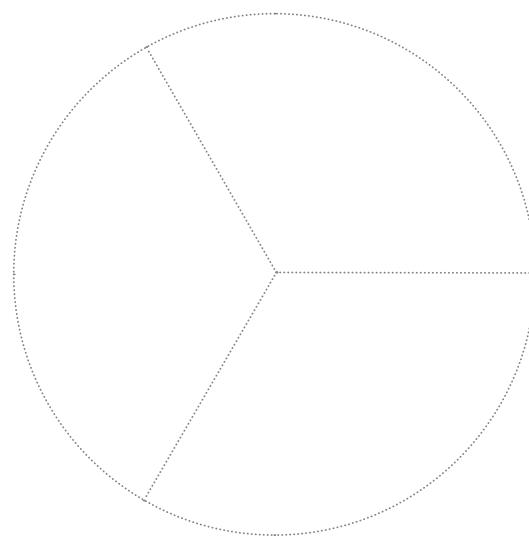
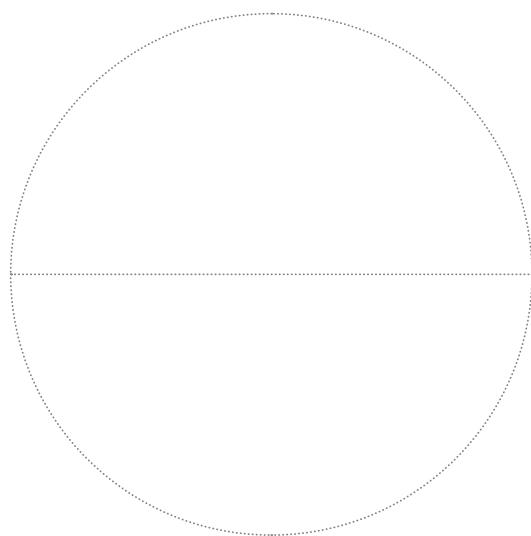
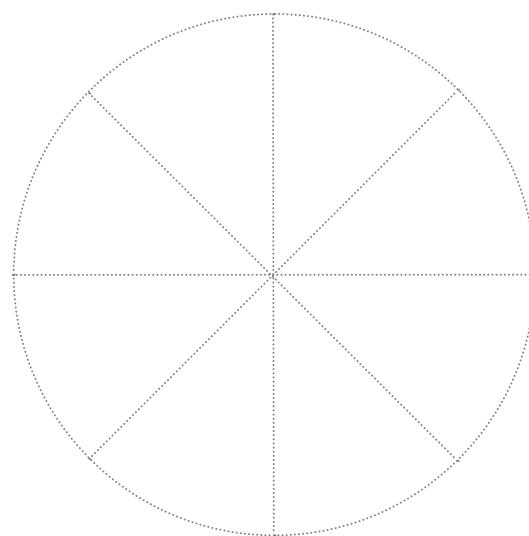
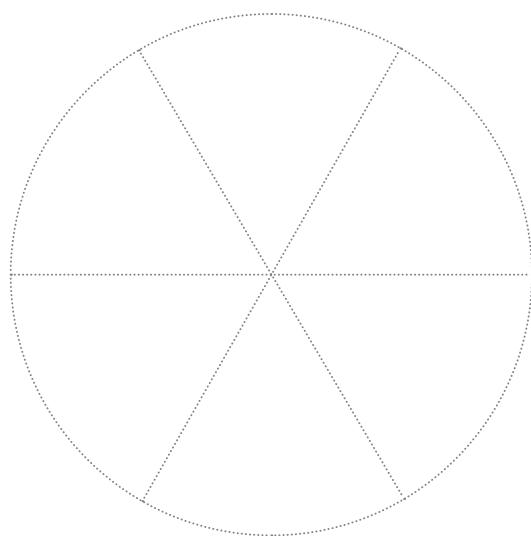
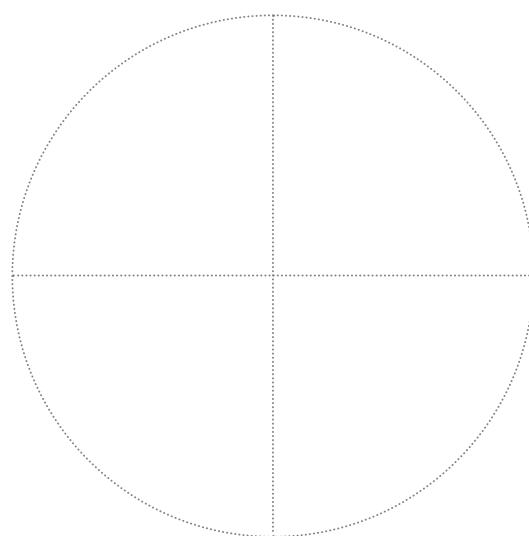
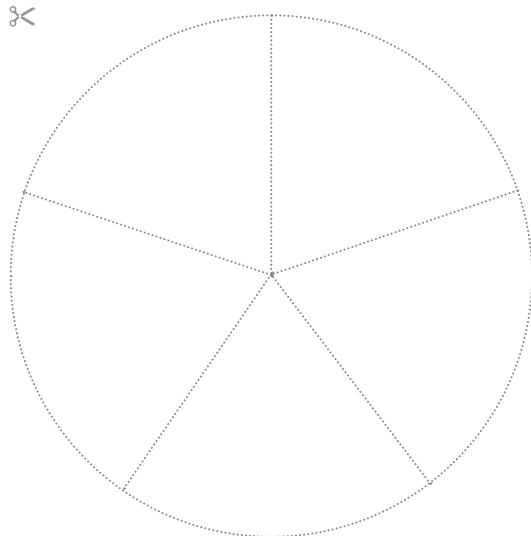


Te Pouitama Tau  
Rauemi Tārua 4–18

## Wehenga Hautau

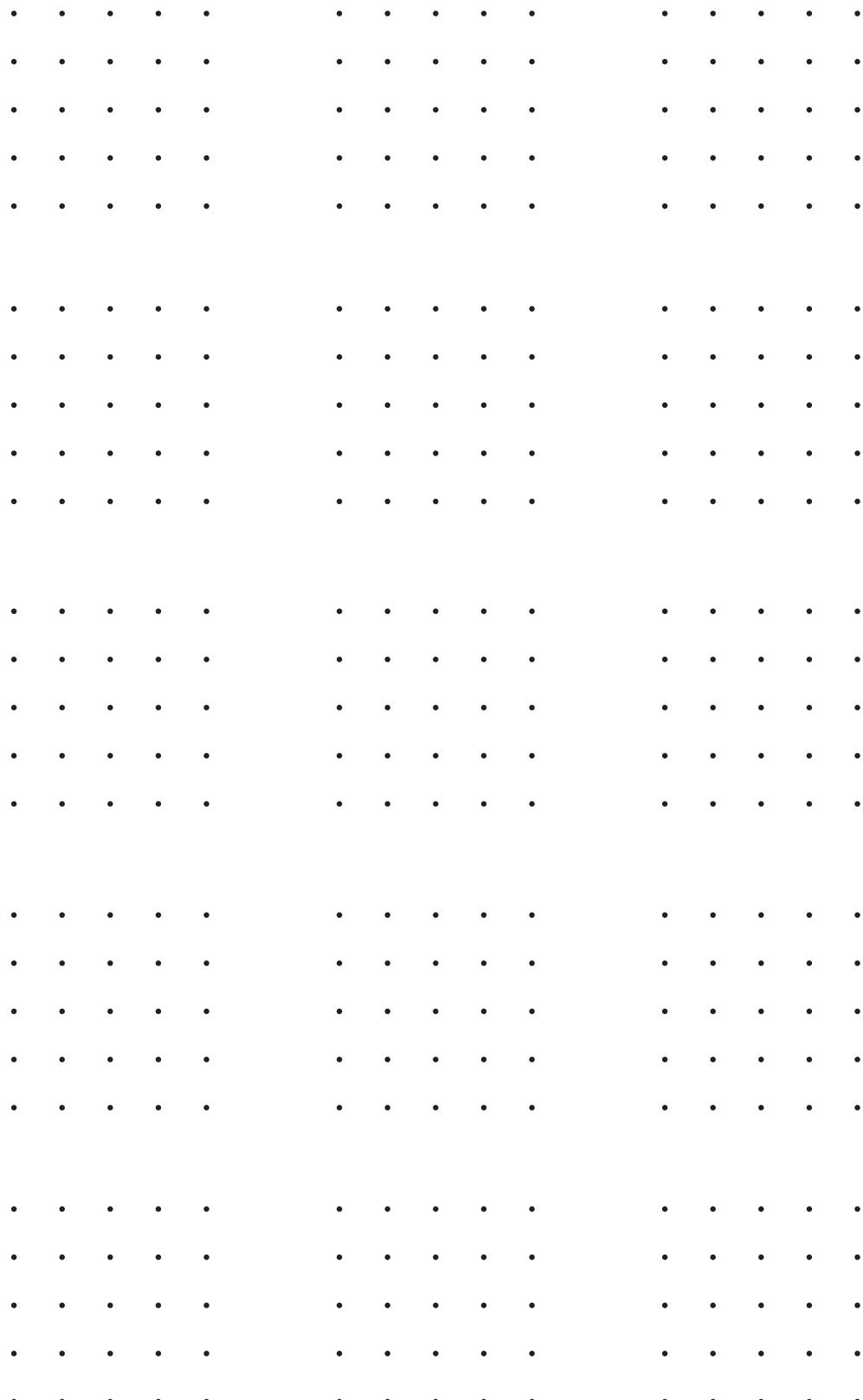
Te Poutama Tau  
Rauemi Tārua 4–19

Whakaahuangia ki te kāri, ka tapahi ai i ngā hautanga porowhita. He pai mēnā ka whakarahia ake ki te A3.



## Hautanga Papa Tīrau 1

Te Poutama Tau  
Rauemi Tārua 4–20



A large rectangular grid designed for handwriting practice. The grid is divided into four equal columns by vertical dotted lines and ten equal rows by horizontal dotted lines. In the top-left corner of the grid, there is a small, stylized icon consisting of a vertical column of short horizontal strokes followed by a series of vertical lines of increasing height, resembling a stylized tree or mountain.

## Wharewhare Hautau

Te Poutama Tau  
Rauemi Tāruai 4-22

$\frac{2}{3}$	$\frac{5}{4}$	$\frac{7}{8}$
$\frac{4}{2}$	$\frac{9}{6}$	$\frac{10}{8}$
$\frac{3}{8}$	$\frac{3}{3}$	$\frac{2}{4}$

4-22

Te Poutama Tau  
4-22

$\frac{4}{4}$	$\frac{2}{8}$	$\frac{1}{3}$
$\frac{8}{6}$	$\frac{5}{8}$	$\frac{4}{6}$
$\frac{1}{2}$	$\frac{6}{3}$	$\frac{12}{8}$

Te Poutama Tau  
4-22

$\frac{2}{2}$	$\frac{4}{3}$	$\frac{1}{4}$
$\frac{10}{8}$	$\frac{6}{4}$	$\frac{4}{8}$
$\frac{6}{3}$	$\frac{7}{8}$	$\frac{2}{6}$

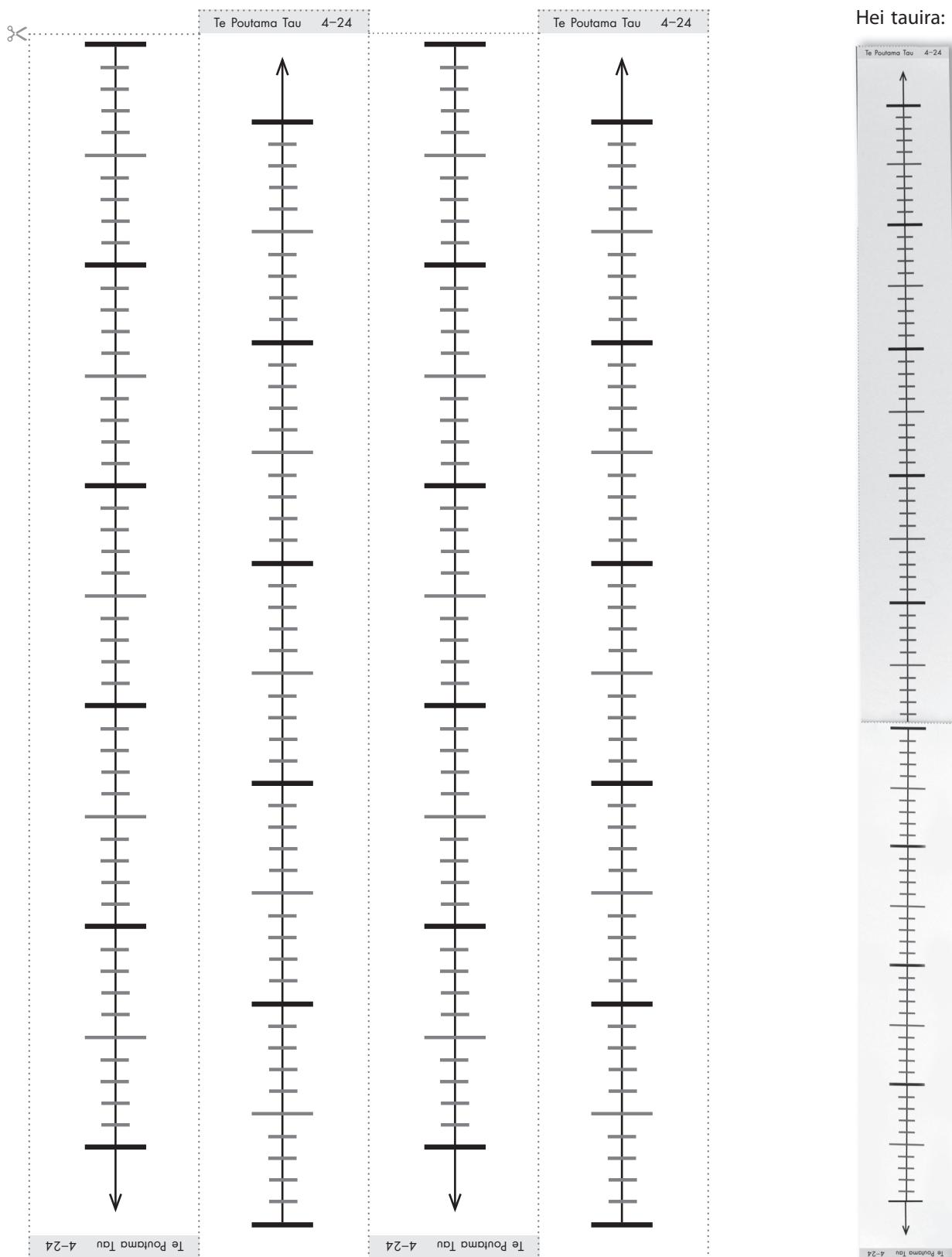
Te Poutama Tau  
4-22

125	0.7
6.2	13.53
4.15	8.83
7.20	1.666
9.099	5.333

## Rārangi Tau ā-Ira Wātea 1

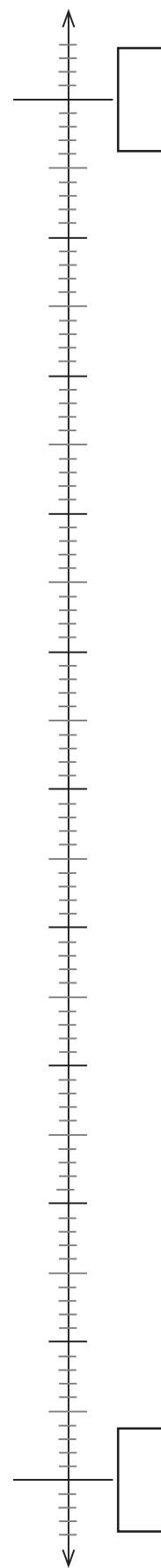
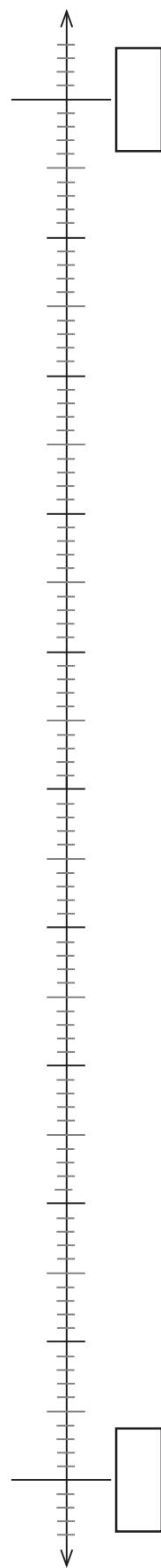
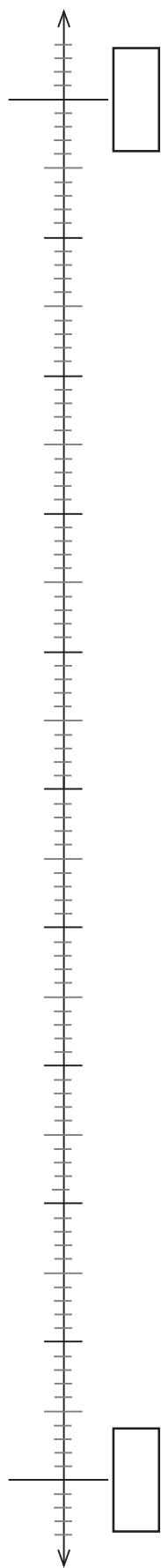
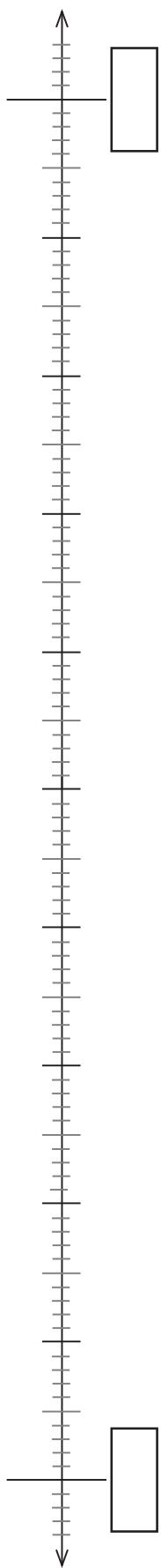
Te Poutama Tau  
Rauemi Tārua 4-24

Whakarahia ake ki te A3, ka tapahi ai. Whakapiria ngā wāhanga e rua o ia rārangi tau.



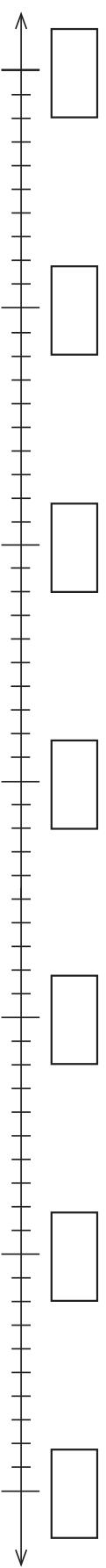
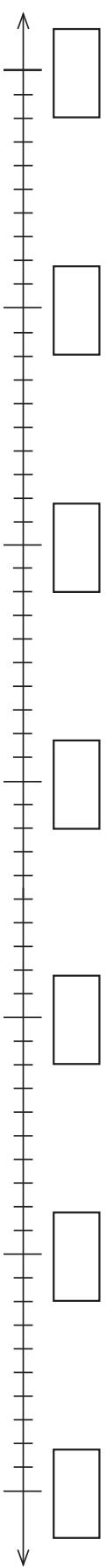
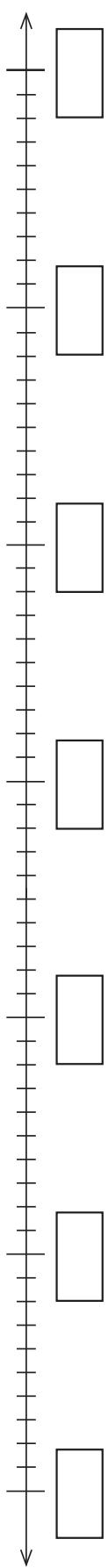
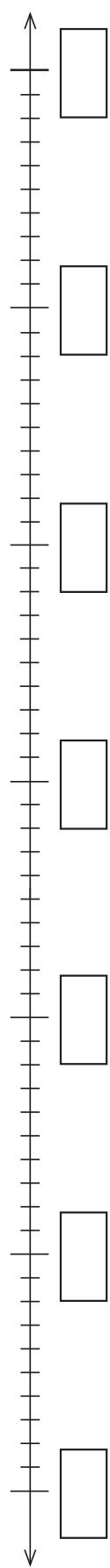
## Rārangi Tau ā-Ira Wātea 2

Te Poutama Tau  
Rauemi Tārua 4–25



## Whakaawhiwhia ki te Tekau

Te Poutama Tau  
Rauemi Tāruat 4–26





ōrau	haurau	hautanga ā-lra
10%	$\frac{10}{100}$	0.1
30%	$\frac{50}{100}$	
80%		
20%	$\frac{6}{100}$	
		0.4
		0.04
	$\frac{80}{100}$	
		0.07
9%		
		0.05

ōrau	haurau	hautanga ā-lra
15%	$\frac{15}{100}$	0.15
39%	$\frac{59}{100}$	
12%		
34%	$\frac{69}{100}$	
		0.88
	$\frac{6}{100}$	0.47
		0.4
		0.04
	$\frac{80}{100}$	
		0.07
9%		
		0.05

6	7	5
12	11	14
6	4	9
5	2	4
8	9	12
3	7	8
9	1	7
13	10	10
4	9	3

## Whārite Tāpiritanga

Te Poutama Tau  
Rauemi Tārua 4-29

7	6	5
8	8	10
1	2	5
Te Poutama Tau	4-29	Te Poutama Tau
7	8	8
16	14	13
9	6	5
Te Poutama Tau	4-29	Te Poutama Tau
3	6	7
7	11	13
4	5	6
Te Poutama Tau	4-29	Te Poutama Tau

## Whārite Tāpiritanga

Te Poutama Tau  
Rauemi Tārua 4–29

8	9	9
16	18	17
8	9	8
3	4	4
6	9	8
3	5	4
5	2	3
7	6	5
2	4	2

## Whārite Tāpiritanga

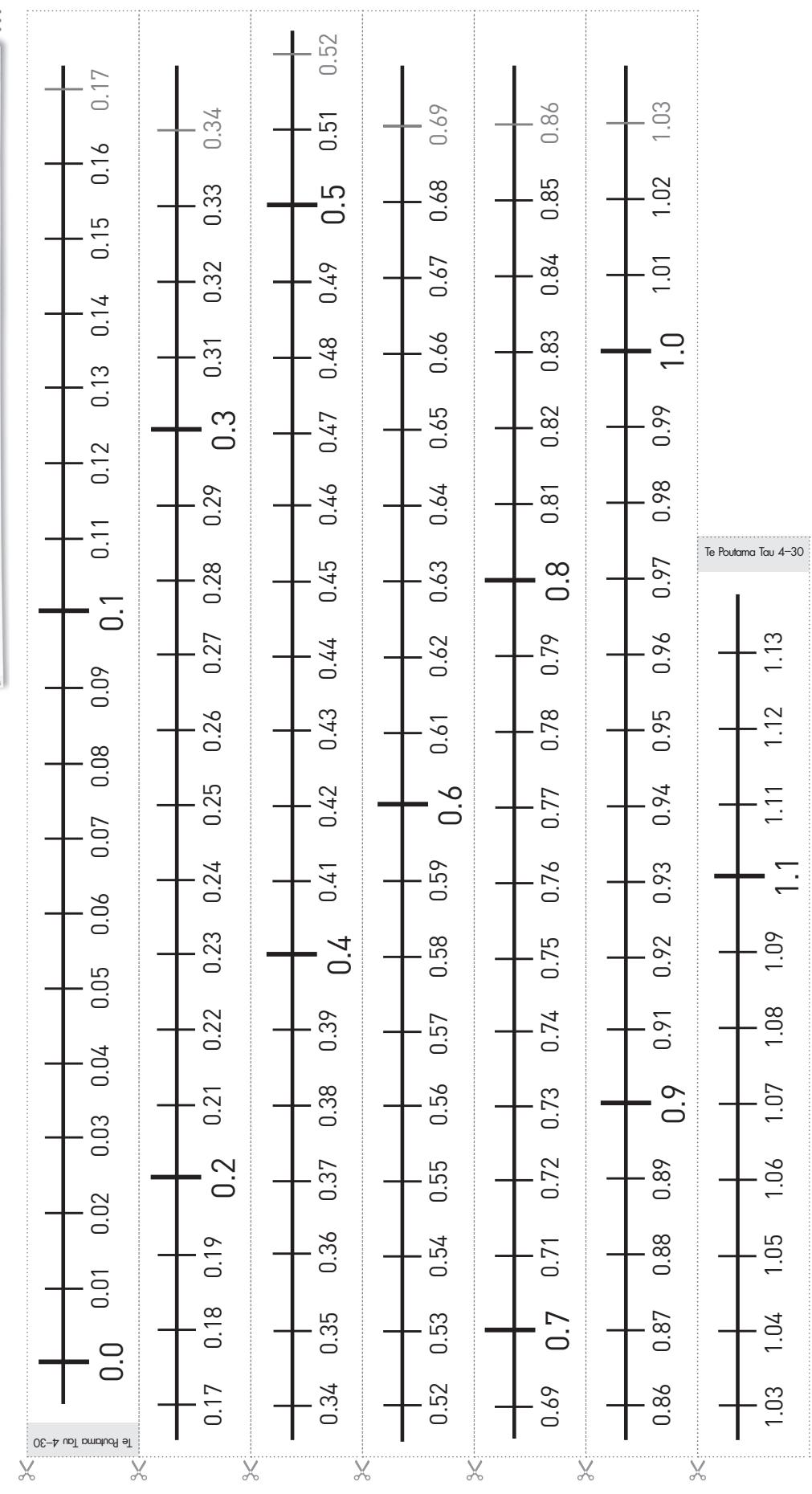
Te Poutama Tau  
Rauemi Tārua 4-29

3	3	6			
9	11	10			
6	8	4			
2	3	7			
11	12	12			
9	9	5			
7	9	7			
14	15	15			
7	6	8			
Te Poutama Tau	4-29	Te Poutama Tau	4-29	Te Poutama Tau	4-29

## Rārangi Tau ā-īra

Te Poutama Tau  
Rauemi Tārua 4-30

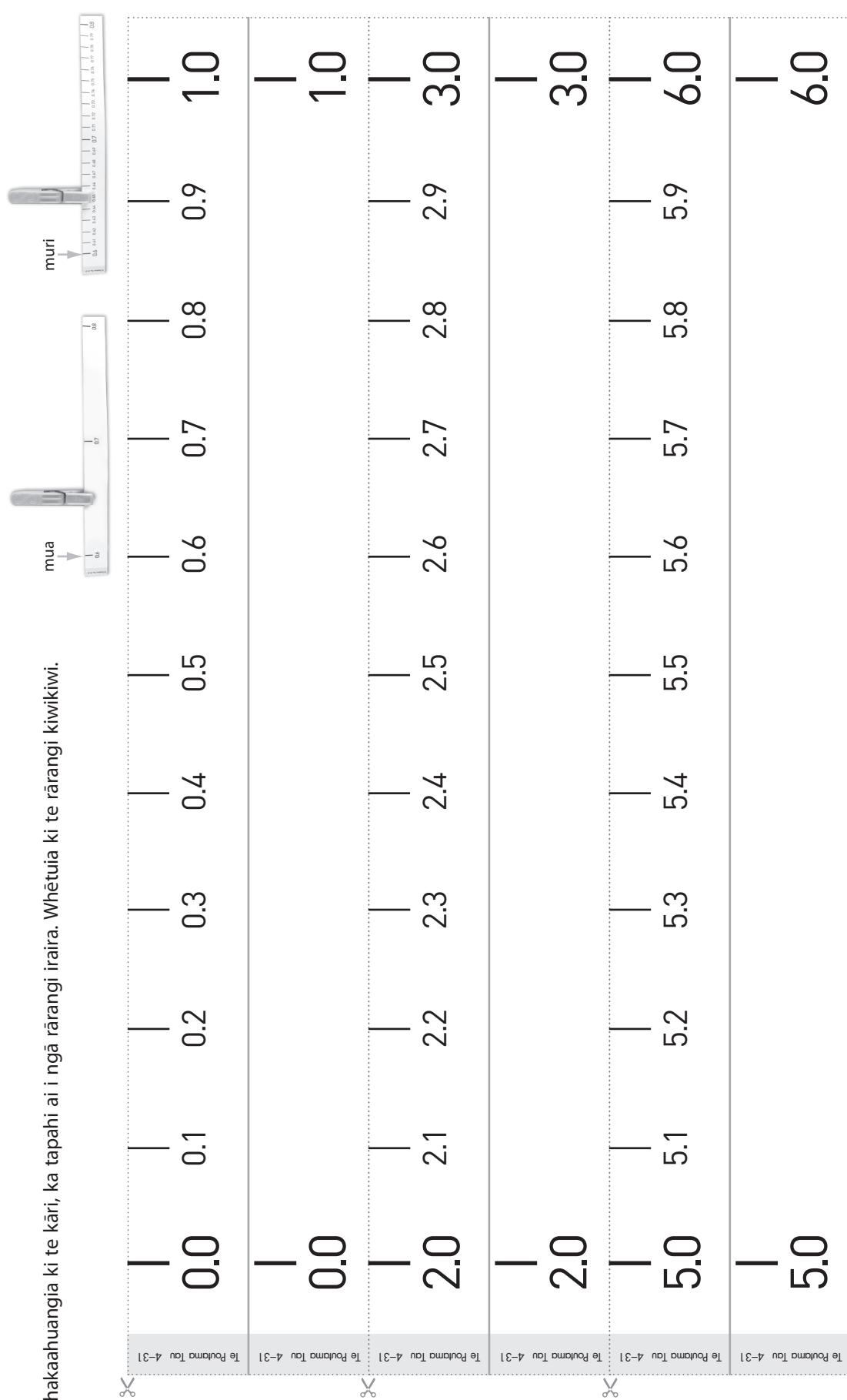
Whakaahuangia, ka tapahi ai. Whakapiria kia kotahi te rārangi tau ā-īra.

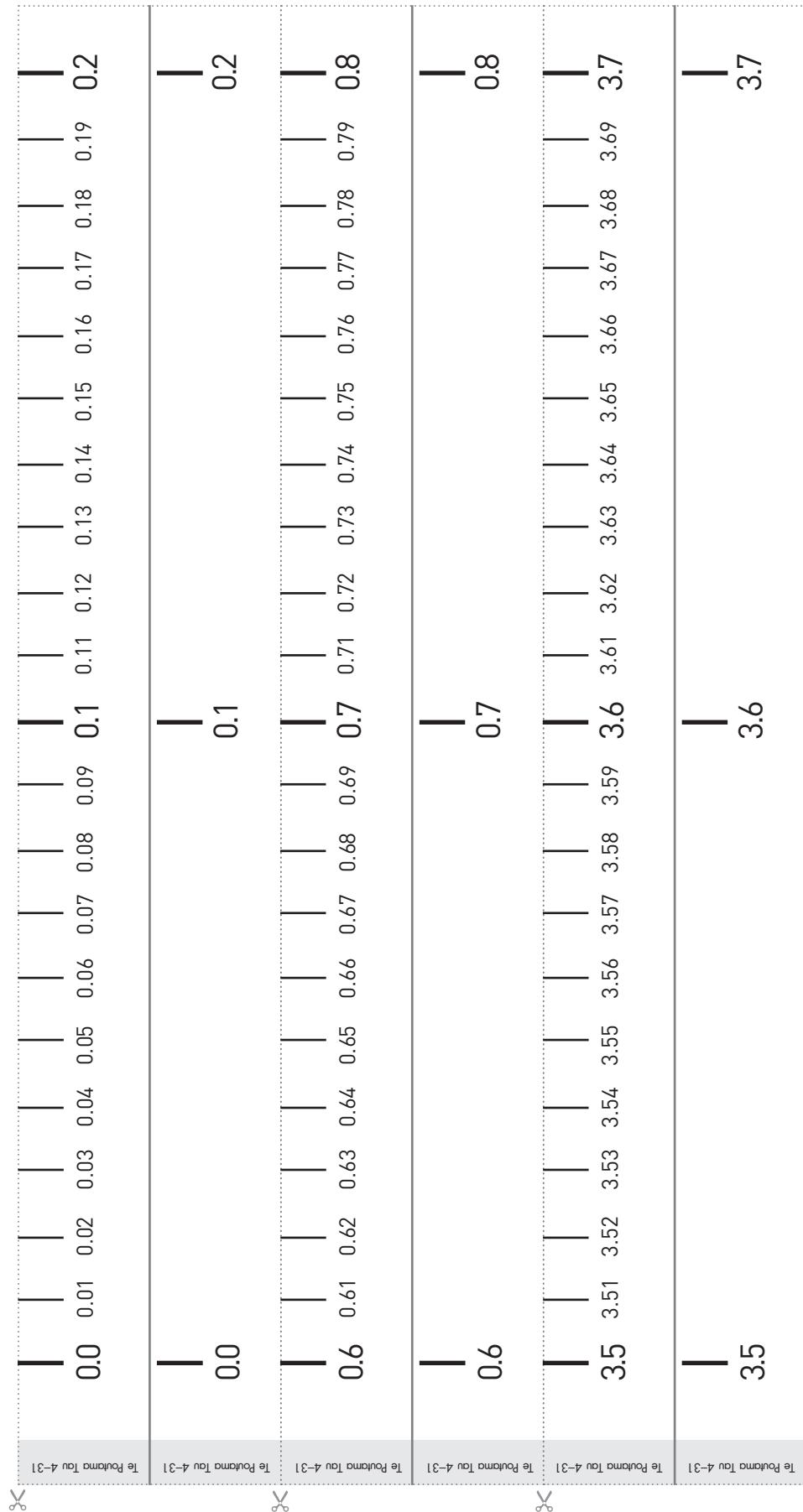


## Rārangi Tau ā-Ira Wātea

Te Pourama Tau  
Rauemi Tāruat 4-31

Whakaahuangia ki te kāri, ka tapahi ai i ngā rārangi iraira. Whētua ki te rārangi kiwīkiwi.

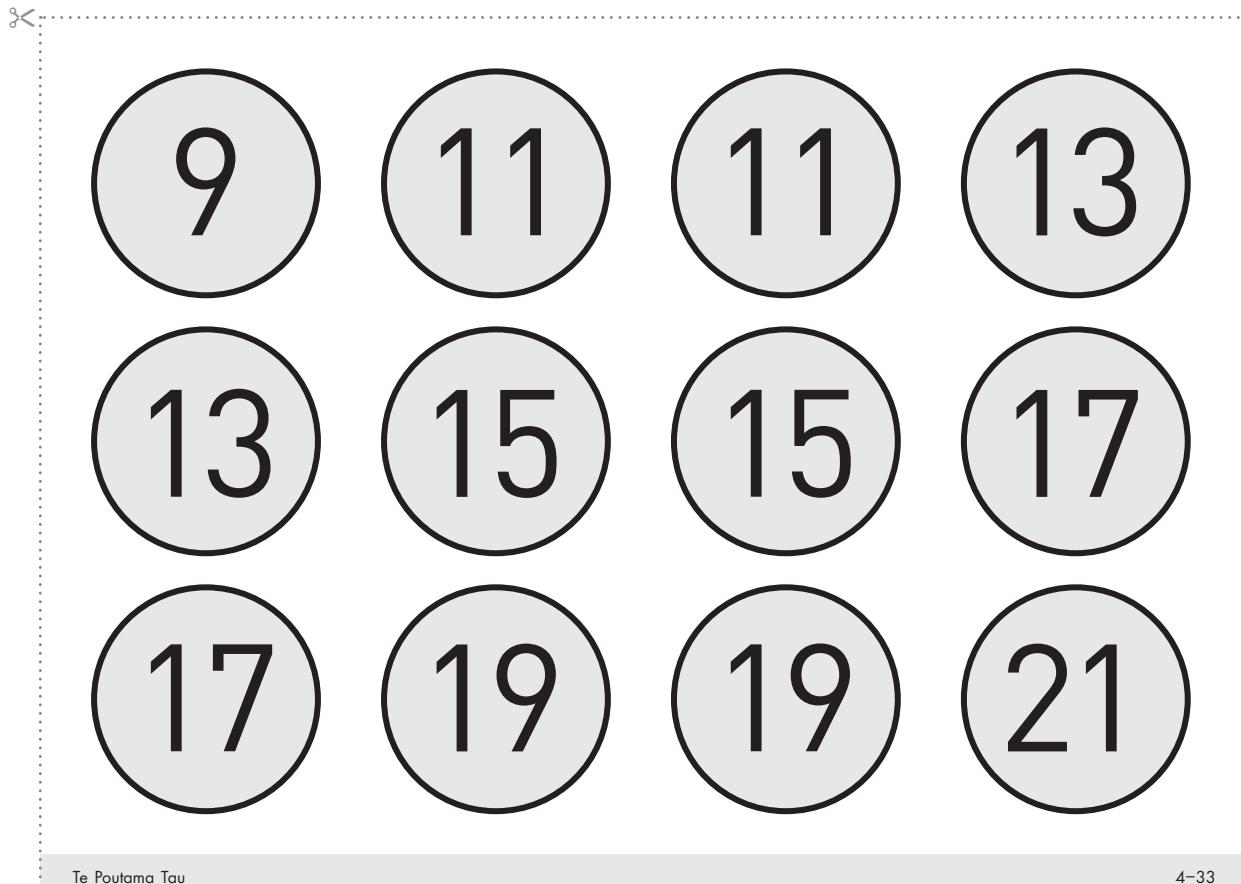




## Tau Matirua

Te Pouarua Tau  
Rauemi Tārua 4–32





## Honohono Tau

Te Poutama Tau  
Rauemi Tārua 4–34

15	9	6	7
3	12	8	5
7	4	13	2
5	1	11	10

10	8	14	25
18	2	6	15
13	4	3	9
23	11	7	16

## Honohono Tau

Te Poutama Tau  
Rauemi Tārua 4–34



15	4	6	13
14	5	6	15
7	1	9	2
12	21	11	10



Te Poutama Tau

4–34

14	1	13	26
16	5	9	17
2	8	3	11
20	18	7	14

Te Poutama Tau

4–34

## Arawhata Paparau

Te Poutama Tau  
Rauemi Tārua 4–35

Whakaahuangia, ka tapahi ai.



## Whārite Whakareatanga

Te Poutama Tau  
Rauemi Tārua 4–36



6

7

5

36

28

45

6

4

9

Te Poutama Tau

4–36

Te Poutama Tau

4–36

Te Poutama Tau

4–36

5

2

4

15

14

32

3

7

8

Te Poutama Tau

4–36

Te Poutama Tau

4–36

Te Poutama Tau

4–36

9

1

7

36

9

21

4

9

3

Te Poutama Tau

4–36

Te Poutama Tau

4–36

Te Poutama Tau

4–36

## Whārite Whakareatanga

Te Poutama Tau  
Rauemi Tārua 4–36

7	6	5
7	12	25
1	2	5
Te Poutama Tau 4–36	Te Poutama Tau 4–36	Te Poutama Tau 4–36
7	8	8
63	48	40
9	6	5
Te Poutama Tau 4–36	Te Poutama Tau 4–36	Te Poutama Tau 4–36
3	6	7
12	30	42
4	5	6
Te Poutama Tau 4–36	Te Poutama Tau 4–36	Te Poutama Tau 4–36

## Whārite Whakareatanga

Te Poutama Tau  
Rauemi Tārua 4–36



8

9

9

64

81

72

8

9

8

Te Poutama Tau

4–36

Te Poutama Tau

4–36

Te Poutama Tau

4–36

3

4

4

9

20

16

3

5

4

Te Poutama Tau

4–36

Te Poutama Tau

4–36

Te Poutama Tau

4–36

5

2

3

10

8

6

2

4

2

Te Poutama Tau

4–36

Te Poutama Tau

4–36

Te Poutama Tau

4–36

## Whārite Whakareatanga

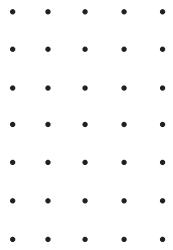
Te Poutama Tau  
Rauemi Tārua 4–36

3	3	6
18	24	24
6	8	4
Te Poutama Tau 4–36	Te Poutama Tau 4–36	Te Poutama Tau 4–36
2	3	7
18	27	35
9	9	5
Te Poutama Tau 4–36	Te Poutama Tau 4–36	Te Poutama Tau 4–36
7	9	7
49	54	56
7	6	8
Te Poutama Tau 4–36	Te Poutama Tau 4–36	Te Poutama Tau 4–36

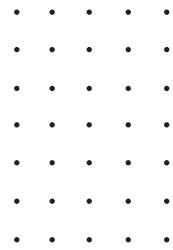
## Hautanga Papa Tīrau 2

Te Poutama Tau  
Rauemi Tārua 4–37

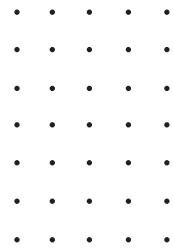
Whakaaturia ngā hautanga ki ngā papa tīrau.



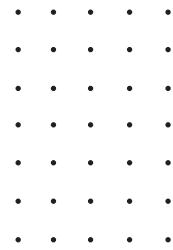
hauono



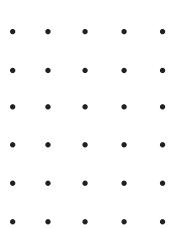
hauwhā



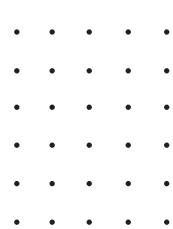
hautoru



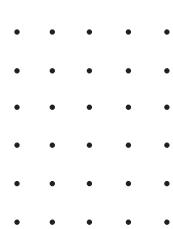
hautekau mā rua



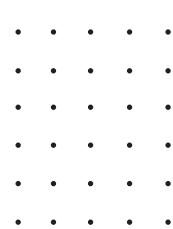
haurima



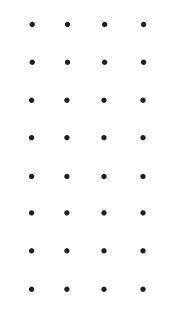
hauwhā



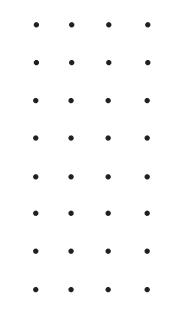
hautekau



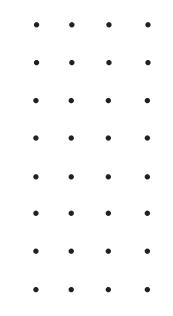
hauwaru



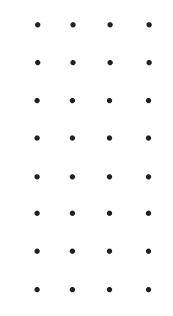
hautoru



hauono



hauwaru

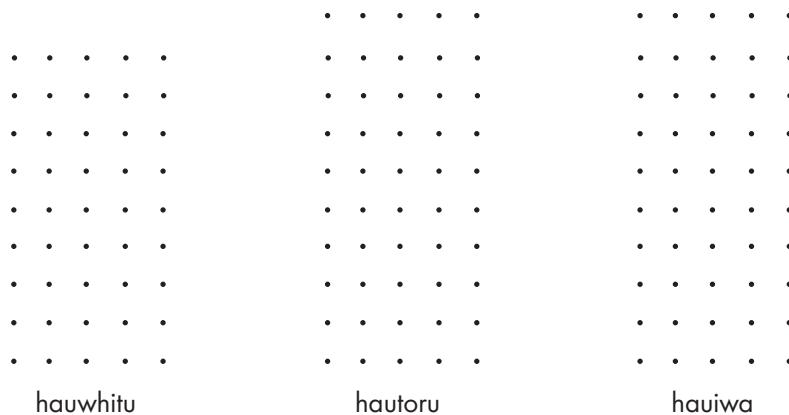


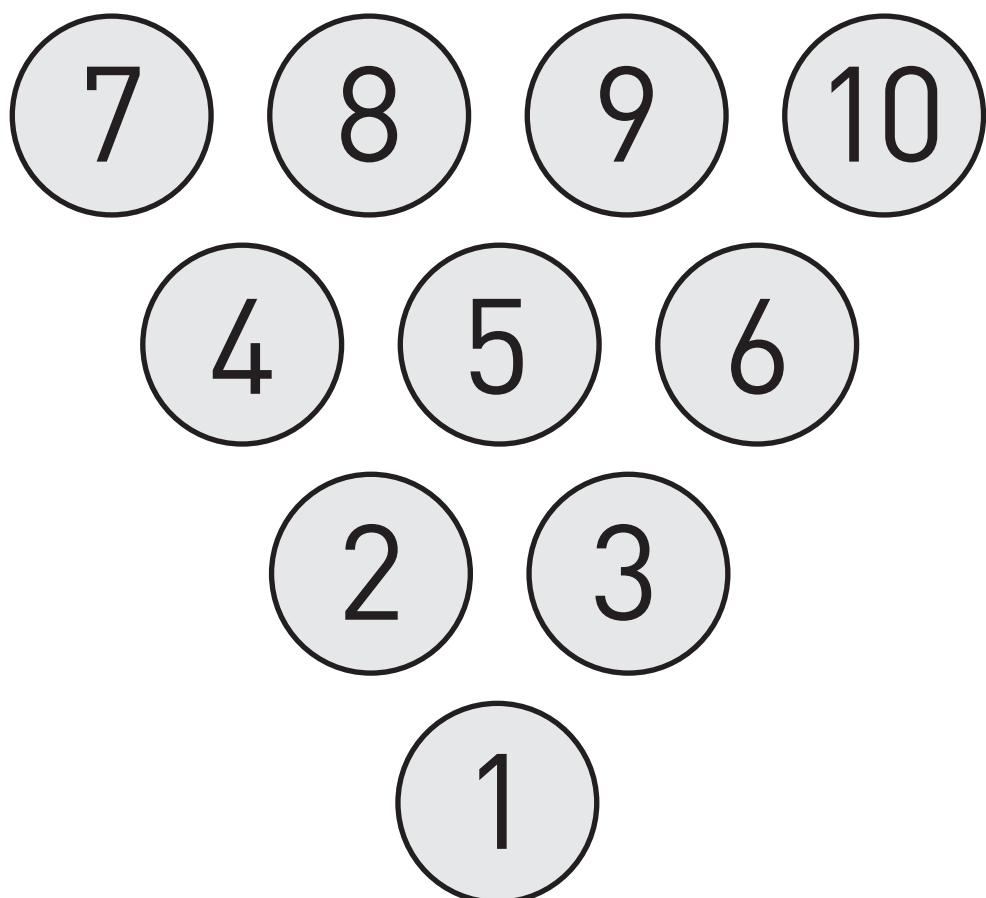
hauwhā

## Hautanga Papa Tīrau 3

Te Poutama Tau  
Rauemi Tārua 4–38

Whakaaturia ngā hautanga ki ngā papa tīrau.







## Te Kuputaka



## Māori → Ingarihi

<b>aho pirepire</b>	bead string
<b>anga pirepire</b>	Slavonic abacus, bead frame ( <i>kupu kē atu: takatātai huapae</i> )
<b>anga tekau</b>	tens frame
<b>āwhata</b>	scale ( <i>takenga mai: arawhata - ladder</i> )
<b>āwhiwahi</b>	approximate
<b>hautanga ā-ira</b>	decimal fraction
<b>hautau ūrite</b>	equivalent fraction
<b>hautau waetahi</b>	unit fraction
<b>hautau waetahi-kore</b>	non-unit fraction
<b>hererapa</b>	rubber band
<b>huapae</b>	horizontal ( <i>kupu kē atu: pae, whakapae</i> )
<b>huarea</b>	factorial
<b>huinga</b>	set
<b>kapa</b>	row ( <i>kupu kē atu: rārangī huapae [horizontal line]</i> )
<b>kāri pere</b>	arrow card
<b>kāri tākaro</b>	game card
<b>kauruku ~tia</b>	shade
<b>kini pepa</b>	paper clip
<b>koeko</b>	cone ( <i>kupu kē atu: koeko porowhita</i> )
<b>kōwhiuwhiu tau</b>	number fan
<b>māroha ~tia</b>	unfold
<b>mataono tau</b>	dice
<b>mātauranga tau</b>	number knowledge
<b>mati</b>	digit
<b>matimaha</b>	multi-digit
<b>matirua</b>	two digit
<b>matitahi</b>	single digit
<b>mātiti</b>	peg
<b>meka matua</b>	basic facts
<b>moni hua</b>	profit
<b>ngaku</b>	strip
<b>ngaku pepa</b>	paper strip
<b>ngaku tau hurahura</b>	number flip strip
<b>ngohe</b>	activity, task

<b>ōrau</b>	percent ( <i>kupu kē atu</i> : paihēneti)
<b>paheko tau</b>	number operation
<b>paipa uara tū</b>	place value pipe
<b>pakitau</b>	number story
<b>paparanga uara tū</b>	place-value hierarchy
<b>paparau</b>	hundreds board
<b>paparau hurahura</b>	hundreds board flip array
<b>papa tīrau</b>	geoboard
<b>parehe</b>	pizza
<b>pātuhi</b>	button or key on a calculator or computer
<b>pepa tukutuku</b>	grid paper
<b>pīrori ~a</b>	roll (a dice)
<b>poraka honohono</b>	multi-link cubes (blocks)
<b>porotiti</b>	counter ( <i>kupu kē atu</i> : pātene)
<b>porotiti pūataata</b>	transparent counter
<b>pou</b>	column ( <i>kupu kē atu</i> : rārangi pou [vertical line])
<b>poutū</b>	vertical
<b>puka mano</b>	thousands book
<b>pūkei kāri</b>	pack of cards ( <i>kupu kē atu</i> : pūranga kāri)
<b>pūrua</b>	power of two (square a number) ( <i>tohu</i> : $^2$ , $^3$ ...)
<b>pūtakerua</b>	square root ( <i>tohu</i> : $\sqrt{\phantom{x}}$ )
<b>rapanga</b>	problem
<b>rārangi hautau</b>	fraction number line
<b>rārangi tau</b>	number line ( <i>kupu kē atu</i> : aho tau)
<b>rārangi tau ā-ira</b>	decimal number line
<b>rārangi tau wātea</b>	blank number line
<b>rauata</b>	overhead projector
<b>rauemī tārua</b>	copymaster
<b>raupapa</b>	sequence, put in order
<b>rautaki tau</b>	number strategy
<b>rearua</b>	double
<b>riwhiriwhi ~a</b>	shuffle (cards)
<b>takirua</b>	pair, in twos ( <i>kupu kē atu</i> : punaruua)
<b>takirua tau</b>	number pair
<b>takitahi</b>	single

tapeke	total
tātaitai	calculator
tatau ake	count on
tatau māwhitiwhiti	skip count ( <i>kupu kē atu</i> : kaute kōhitihiti)
tau ā-ira	decimal
tauhono	addend (number being added)
taukehe	odd number
tau ngahuru	tens number (10, 20, 30 ...)
tauoti	whole number
tauraro	denominator
tauraro pātahi	common denominator
taurea	multiple
taurea pātahi	common multiple
tau roha	expanded number
taurua	even number
taurunga	numerator
tautohu	identify
tauwehe	factor
tauwehe pātahi	common factor
tohutau	numeral
tūtahi	whole ( <i>kupu kē atu</i> : katoa)
tūtohi	chart, table ( <i>kupu kē atu</i> : papa [raraunga])
uara tū	place value
whakaahua ā-hinengaro	mental image
whakaawhiwhi ~a	round (a number)
whakatairite	compare ( <i>kupu kē atu</i> : whakataurite ~a)
whakatepae	in a horizontal direction
whakatepou	in a vertical direction
whare uara tū	place value house
wharewhare	housie, bingo
whārite	equation
whētui ~a	fold

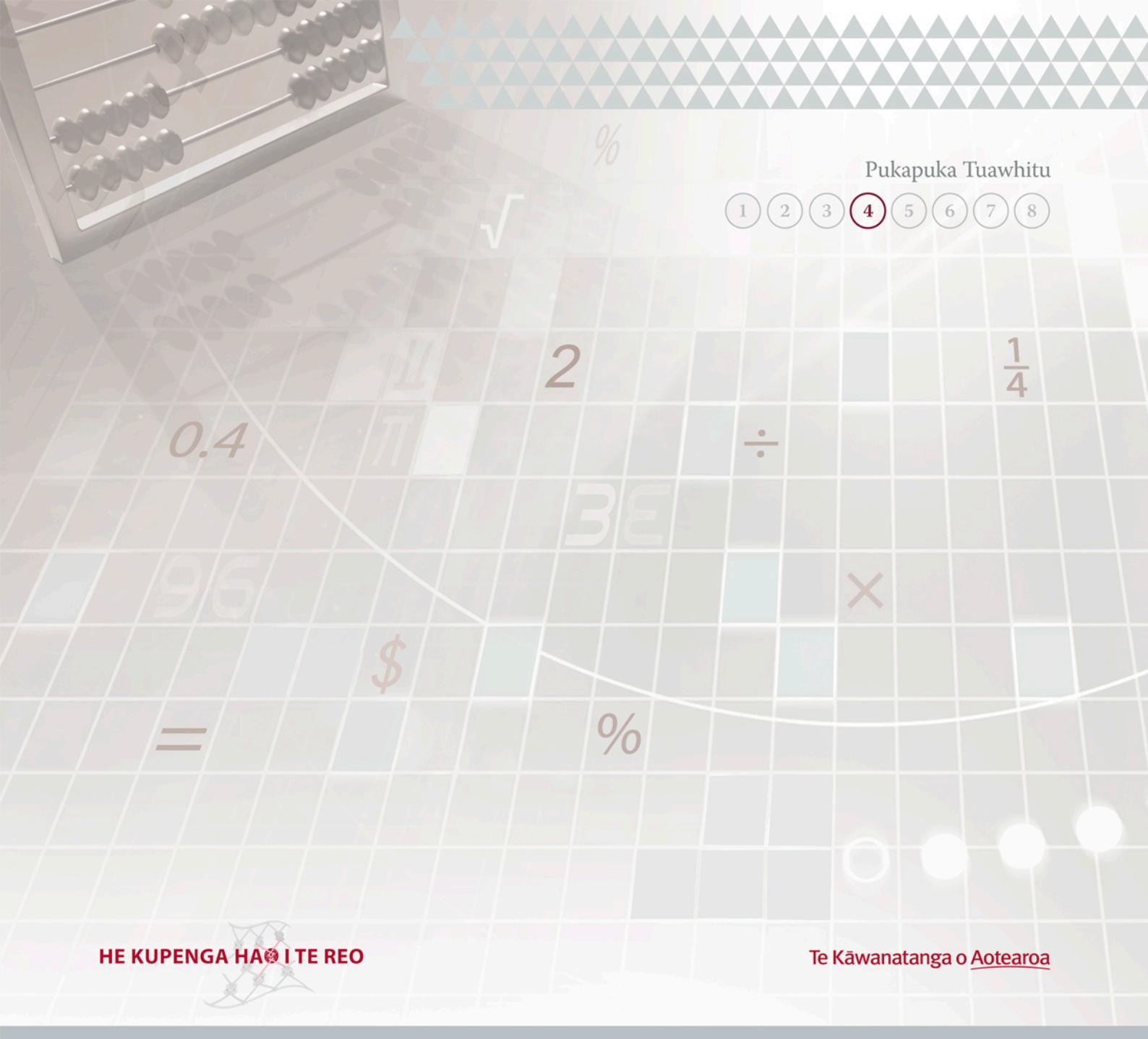
## Ingarihi → Māori

activity, task	<b>ngohe</b>
addend (number being added)	<b>tauhono</b>
approximate	<b>āwhiwhi</b>
arrow card	<b>kāri pere</b>
basic facts	<b>meka matua</b>
bead string	<b>aho pirepire</b>
bingo	<b>wharewhare</b>
blank number line	<b>rārangī tau wātea</b>
button or key on a calculator or computer	<b>pātuhi</b>
calculator	<b>tātaitai</b>
chart, table	<b>tūtohi</b> ( <i>kupu kē atu: papa [raraunga]</i> )
column	<b>pou</b> ( <i>kupu kē atu: rārangī pou [vertical line]</i> )
common denominator	<b>tauraro pātahi</b>
common factor	<b>tauwehe pātahi</b>
common multiple	<b>taurea pātahi</b>
compare	<b>whakatairite</b> ( <i>kupu kē atu: whakataurite ~a</i> )
cone	<b>koeko</b> ( <i>kupu kē atu: koeko porowhita</i> )
copymaster	<b>rauemī tārua</b>
count on	<b>tatau ake</b>
counter	<b>porotiti</b> ( <i>kupu kē atu: pātene</i> )
decimal	<b>tau ā-ira</b>
decimal fraction	<b>hautanga ā-ira</b>
decimal number line	<b>rārangī tau ā-ira</b>
denominator	<b>tauraro</b>
dice	<b>mataono tau</b>
digit	<b>mati</b>
double	<b>rearua</b>
equation	<b>whārite</b>
equivalent fraction	<b>hautau ūrite</b>
even number	<b>taurua</b>
expanded number	<b>tau roha</b>
factor	<b>tauwehe</b>
factorial	<b>huarea</b>

fold	whētui ~a
fraction number line	rārangī hautau
game card	kāri tākaro
geoboard	papa tīrau
grid paper	pepa tukutuku
horizontal	huapae ( <i>kupu kē atu:</i> pae, whakapae)
housie	wharewhare
hundreds board	paparau
hundreds board flip array	paparau hurahura
identify	tautohu
in a horizontal direction	whakatepae
in a vertical direction	whakatepou
mental image	whakaahua ā-hinengaro
multi-digit	matimaha
multi-link cubes (blocks)	poraka honohono
multiple	taurea
non-unit fraction	hautau waetahi-kore
number fan	kōwhiuwhiu tau
number flip strip	ngaku tau hurahura
number knowledge	mātauranga tau
number line	rārangī tau ( <i>kupu kē atu:</i> aho tau)
number operation	paheko tau
number pair	takirua tau
number story	pakitau
number strategy	rautaki tau
numeral	tohutau
numerator	taurunga
odd number	taukehe
overhead projector	rauata
pack of cards	pūkei kāri ( <i>kupu kē atu:</i> pūranga kāri)
pair, in twos	takirua ( <i>kupu kē atu:</i> punarua)
paper clip	kini pepa
paper strip	ngaku pepa
peg	mātitī
percent	ōrau ( <i>kupu kē atu:</i> paihēneti)

pizza	<b>parehe</b>
place value	<b>uara tū</b>
place value house	<b>whare uara tū</b>
place value pipe	<b>paipa uara tū</b>
place-value hierarchy	<b>paparanga uara tū</b>
power of two (square a number)	<b>pūrua</b> ( <i>tohu:</i> <sup>2</sup> , <sup>3</sup> ...)
problem	<b>rapanga</b>
profit	<b>moni hua</b>
roll (a dice)	<b>pīrori ~a</b>
round (a number)	<b>whakaawhiwhi ~a</b>
row	<b>kapa</b> ( <i>kupu kē atu:</i> rārangī huapae [horizontal line])
rubber band	<b>hererapa</b>
scale	<b>āwhata</b> ( <i>takenga mai:</i> arawhata - ladder)
sequence, put in order	<b>raupapa</b>
set	<b>huinga</b>
shade	<b>kauruku ~tia</b>
shuffle (cards)	<b>riwhiriwhi ~a</b>
single	<b>takitahi</b>
single digit	<b>matitahi</b>
skip count	<b>tatau māwhitiwhiti</b> ( <i>kupu kē atu:</i> kaute kōhitihiti)
Slavonic abacus, bead frame	<b>anga pirepire</b> ( <i>kupu kē atu:</i> takatātai huapae)
square root	<b>pūtakerua</b> ( <i>tohu:</i> $\sqrt{ }$ )
strip	<b>ngaku</b>
table, chart	<b>tūtohi</b> ( <i>kupu kē atu:</i> papa [raraunga])
tens frame	<b>anga tekau</b>
tens number (10, 20, 30 ...)	<b>tau ngahuru</b>
thousands book	<b>puka mano</b>
total	<b>tapeke</b>
transparent counter	<b>porotiti pūataata</b>
two digit	<b>matirua</b>
unfold	<b>māroha ~tia</b>
unit fraction	<b>hautau waetahi</b>
vertical	<b>poutū</b>
whole	<b>tūtahi</b>
whole number	<b>tauoti</b>





Pukapuka Tuawhitu

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HE KUPENGA HAQ I TE REO



Te Kāwanatanga o Aotearoa