

Tūhono Tahi

1999



Ko Tūhono, he rārangi
kōrero, he mea tātai i te
tū o te pāngarau, o te
pūtaiao me te hangarau
i te horopaki o te ao o
ngā ākonga.

He tīmatanga noa iho ēnei
tuhituhinga hei wero i te hinengaro
o ngā ākonga ki te whakahaere
whakaaro e pā ana ki ētahi atu
hōparatanga.

Ko te tikanga o ngā ngohe, he
whakaoho ake i te harakoa o ngā
akoranga pūtaiao, pāngarau me te
hangarau.

I hangaia a Tūhono Tahi mō ngā
ākonga e mahi ana i ngā taumata 1
ki 3 o te Marautanga o Aotearoa..



TE TĀHUHU O TE MĀTAURANGA
Ministry of Education

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Te Take e Mau ana ngā Tamariki o Rūma 3 i ō rātau Kākahu

He Tavira Hei
Whakaatu Ehara
i te Mea Pūmau te Rapihi

Kākahu Pounamu Kirihou



Tūhono Tahī 1999 Ngā Ihirangi

Kōrero

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i te Mea Pūmau te Rapihi

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Te Tāhuhu o te Mātauranga
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Tūhono Tahī
1999

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HUARAHI MAORI
Auckland College of Education

Ngā Kākano

nā K. E. Anderson

Puāwai ai ngā kākano mai i ngā otaota kia tipu ai he otaota hou. He maha ngā āhua me te rahi o ngā kākano. Nā te rerekē o te āhua o ngā kākano i āhei ai rātau ki te rere mā te maha noa atu o ngā huarahi rerekē. Ko ngā manu me ngā pēpeke kei te tohatoha i ētahi o ngā kākano, ā, ko te hau me te wai kei te toha i ētahi atu.

Nō te rākau *sycamore* ngā kākano kei te whārangi nei. He pākau ō rātau kia āhei ai te hau ki te toha i a rātau ki ngā wāhi tawhiti.



He tohetaka tēnei. Whakamahi anō ai te tohetaka i te hau hei toha i ana kākano. Ko ngā wāhi tāhūngahunga kei tētahi moka o ngā kākano ngā mea e whakangāwari ana i te kawē a te hau i ngā kākano. Ko te wāhi ka tipu hei otaota hou ko te puku paku kei tētahi atu o ngā moka o te kākano. I ētahi atu wā ko te tangata tonu kei te toha i ngā kākano tohetaka mā te pupuhi i a rātau ki te hau.





Kei roto tēnei
kākano i tētahi
pītiti. I mārō ai te
kākano nei nā te mea
tērā he roa te wā kātahi
anō ka pai ngā rangi me te
oneone kia tipu ai te kākano. "E hia
nei tau i te kākano e tipu ana," ā, kāore e kotira ana.
Nā, ka tae ana ki te wā tino pai ka tīmata te kākano ki
te tipu kia puāwai he otaota hou.

He pī ēnei. He kākano anō
hoki ēnei. He ngohengohe ō
rātau anga, ā, ko te īngoa o
te anga he pākākano. Koinei i
te tiaki i te kākano mai i ngā
pēpeke me te āhua o ngā
rangi. A tōna wā ka maroke te
pākākano i runga i te aka, ka
tītore. Kātahi ka taka iho
ngā pī ki te oneone ka
kotira. He pēnei anō te
āhua o te tipu o te pīni.

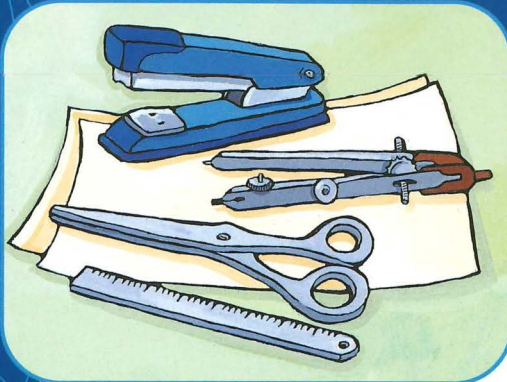


He kākano kei roto i te uho o te āporo. Mehemea ka taka ana he
āporo ki te oneone, ā, ka roa e takoto ana, ka tīmata
ngā kākano ki te kotira. Ka pirau ana te kiko
o te āporo, ā, koinā tonu tōna pū
wairākau hei tipu mō te kākano. I ētahi
wā ka kainga e ngā manu me ētahi
kararehe ngā hua reka,
ka kawea e rātau ngā
kākano i roto i ō rātau
puku ki tētahi atu
wāhi, ā, ka tipu he
rākau āporo i reira.



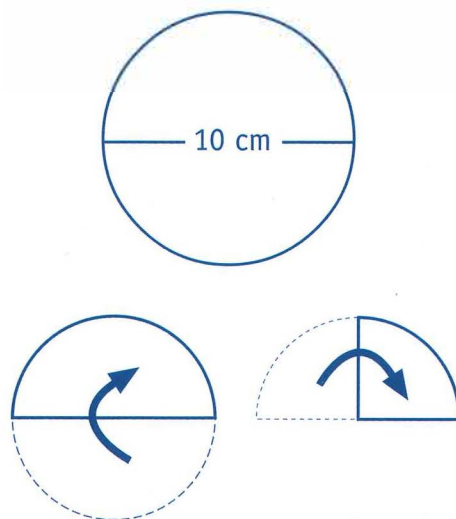
Hangaia tētahi Pākau Takahurihuri

nā Jane Buxton

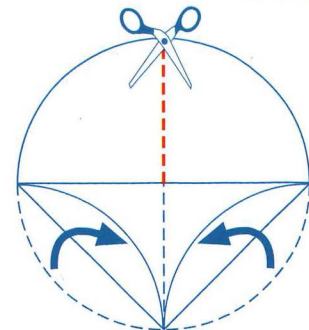


Me whiwhi koe ki tētahi pene, ētahi pepa, he kutikuti, he whakapinepine, he rūri me tētahi kāpehu (he taupoki rānei kia tata ki te 10 mitarau te whitianga, hei tā huri noa i te whitianga).

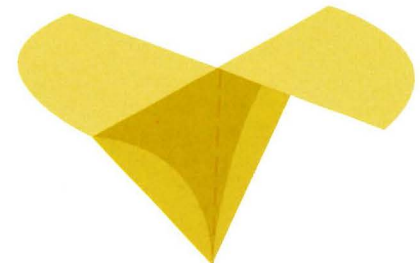
1. Tāia he porowhita ki runga ki te pepa he 10 mitarau te rahi o te whitianga.
2. Tapahia te porowhita ka tango ki waho. Pōkaitia te porowhita kia hāwhe, ka pōkai anō kia noho hāwhe anō. Kātahi ka whakatuwhera i te porowhita. Mā ngā māka pōkaitanga e wehewehe te porowhita kia noho hauwhā.



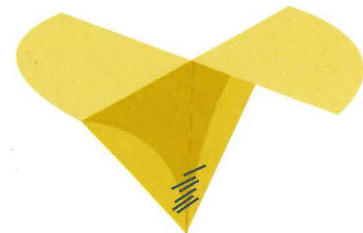
3. Tuhia he rārangi kia whakawhiti i tētahi o ngā hauwhā kia noho hei tapatoru. Kātahi ka mahi pērā anō me tētahi atu o ngā hauwhā kei tōna taha. Pōkaihia te wāhi kei ngā rārangi nei.



4. Ko ērā o ngā hauwhā ka noho hei pākau. Tapahia ngā rārangi i waenganui i a rāua kia tae rawa ki te pū. (He **whero** te kara o te rārangi hei tapahi kei te hoahoa i runga ake nei). Pōkaihia tētahi o ngā pākau kia ahu whakamua, ā, ka pōkai i tētahi atu kia huri whakamuri.



5. Tāpirihia ētahi pine ki te wāhi o raro iho o te pākau takahurihuri. Mā te taumahatanga o ngā pine e āwhina te pākau takahurihuri ki te taka tika. Tērā me whakahaere whakamātautau koe ki te kite e hia ngā pine e hiahitia ana mō tēnei.



6. E tū ki runga ki tētahi tūru ka tuku kia taka tō pākau takahurihuri mai i tētahi wāhi tino teitei e taea ana e koe. Mehemea ka āta tukuna e koe kia taka, ka māmā noa iho tana takahurihuri ki raro.



Hēki i roto i te Kōhanga

nā Jane Buxton

He tākaro tēnei mō ngā tāngata tokorua. Tapahia kia tekau ngā hēki pepa ngātatahi ka tā i te kōhanga mō rātau. Ka āhei rānei koe ki te whakanoho perepere ki runga ki ngā hēki kei te pikitia nei.

Me mahi ia o kōrua ki te tango i ngā hēki takitahi, takirua rānei i te wā kotahi. Ko te tangata e tango ana i te hēki whakamutunga, ko ia te mea ka hinga. Kauaka e tuku kia riro ko koe te mea māna e tango te hēki whakamutunga.

Me whakahaere ngā tākaro nei mō ngā wā tekau. Tērā ka mahi kōrua ko tō hoa ki te kimi huarahi kia noho ai te hēki whakamutunga ki ia mea o kōrua. Me mahi kōrua ki te whakarerekē i te āhua o te tākaro. Me mea koe ki te kite ka aha ana mehemea ka whakaaetia koe ki te tango i te hēki kotahi; kia rua, kia toru rānei ngā hēki e tangohia ana e koe i te wā kotahi. Nā, ka pēhea ana mehemea he rerekē te tatau o ngā hēki kei roto i te kōhanga.

Ka mōhio ana kōrua ko tō hoa ki ngā nekeneke o te tākaro nei, me mea kōrua ki te tākaro me tētahi tangata kāore anō kia purei i mua atu. Kāore e kore ka whakaaro tō hoa hou he aha rā te take ko koe te mea e wikitōria ana i ngā wā katoa!

Taku

Otaota

Whakamīharo

nā Jane Buxton

He tino tere te tipu o taku otaota pārū i roto i taku whare karāhe.

Ia rā e tuaruatia ana tana teitei.

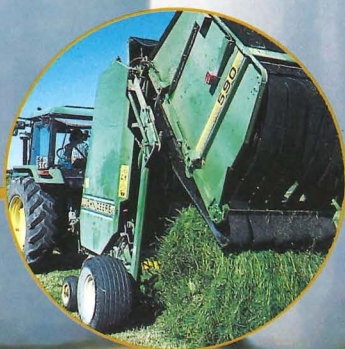
I tētahi rā i pā ia ki te tuanui, he toru mita tōna teitei.

He aha te teitei o te otaota i te rā i mua atu?

Memene!

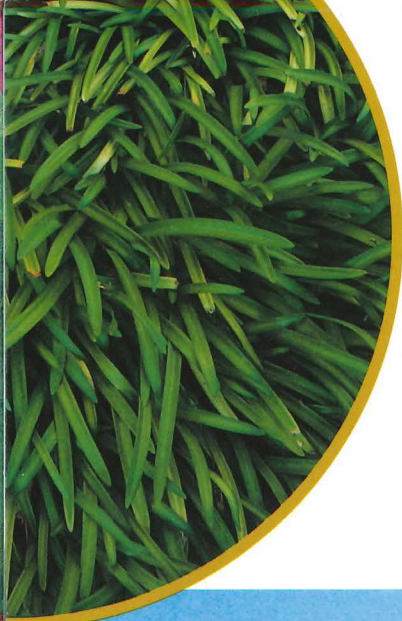
nā Diana Noonan

He anuhe tino kaitā, he tipua tēnā? He tōtiti tākai tino nui? Kāo! He rārangi tino roroa o ētahi mōkihi kirihou he kī katoa i te mauti, i te hei, arā, he *Baylage*, he kupu kāore e kitea e koe i roto i te papakupu ināiane. He kupu tēnei he mea hanga mā te hono i ngā kupu e rua, “*bale*” (he pūhanga hei) me “*silage*” (pātiti he mea tohu). Nō reira ko te *baylage* nei, he pūhanga pātiti he mea tohu.



I te hōtoke, i te wā he mātao rawa mō te pātītī te tipu i ngā pātiki, ka whāngaihia ngā hipi me ngā kau ki te baylage. Mahi baylage ai te pāpā o Miriam Lesley, arā a Roger, i te raumati. I taua wā, he tere te tipu o te pātītī i te mea he mahana ngā rangi.

Tapahi pātītī ai a Roger mā tana moua, e tō haere ana ia i muri i tana tarakihana. I ētahi haora i muri iho, ka kautaka ana ngā pātītī, ka whakamahia e ia tētahi atu mīhini hei whawhao kia noho pēnei i ngā "tākai Swiss" nei.



Ehara te pātītī kākāriki i te maroke pērā i te hei. Me tākai rawa ki roto kirihou kia kore ai e tino pirau. Ka whakamārōtia e te mīhini tākai e ono ngā whakapaparanga kirihou ki runga ki ia tākai Swiss. I tētahi rangi, e rua rānei i muri iho ka kitea kua rerekē te āhua o ngā pātītī.

He kitakita iti nei kei te noho i roto i ngā pātītī. He whanaunga rātau nō ngā kitakita e hanga



miraka pē kawa ana. I roto i te baylage kei te kai ngā kitakita nei i ngā waireka o ngā pātītī he mea tapahi. Ka whakatipu, ka whakatipu rātau i a rātau, ā, ka kai anō hoki te katoa o ō rātau whanaunga i ngā waireka nei. He mea waimarie ki ngā kaiwhakahaere ahuhenua te mahi a ngā kitakita nei ki te hanga i tētahi tino waikawa i a rātau e kai ana. Ko te waikawa reihuka

tēnei, ā, koinei te mea e tohu ana, e pīkara ana i ngā pātītī kei roto i te kirihou - pērā tonu i te āhua o te pīkara o te waikawa i roto i ngā winika i ngā riki, ngā gherkin rānei kei roto ipu karāhe. Ka oti ana



ngā pātītī te pīkara, e kore e pirau. whakarārangitia ana ngā pēre kirihou kua rekareka katoa a Miriam ki te whakahaere tākaro pai māna. Ka anga ia ki te mahi me tētahi tākai kirihou pango tāpiapia. I ētahi wā ka mahia e ia kia memene te baylage, ā, i ētahi wā ka mahia e ia kia poururu.

Ka kī a Miriam, "He maha ngā whakaaro a aku hoa hei kanohi hou mōna. Kāti tou, i te mea tae rawa ki te mutunga o te raumati kua tata pau katoa āku nei whakaaro".



Pēwhea ai te āhua o te mahi a te "pīkara".

Kāore ngā kitakita e noho ana i ngā wāhi he nui rawa te waikawa kei reira. Koirā te take kāore e pirau ana ngā riki me ngā gherkin he mea pīkara. Kei te kauhoe kē rātau i roto i te winika, he waikawa ngoikore e tohu ana i a rātau.

Ko ngā kitakita i roto i te baylage, ka noho ka whakatipu rātau mō tētahi wā. Otirā, ka haere ana te wā i te nui o te waikawa e hanga ana rātau, ā, i a rātau e pīkara ana i te pātītī, ka turakina e rātau ō rātau ake kāinga!

Ko te mate o te kirihou

- Ka noho noa iho hei rapihi ngā baylage kirihou, ā, ka mau i runga taiapa, i runga rākau.
- He uaua ki te pirau i te wā kua kore e pīrangitia.
- Me tahu rawa i roto i tētahi tino pūtūmata kia kore ai ngā au o te kirihou e paitini i te hau.
- Ki ētahi, kāore e pērā rawa te pai o te āhua o ngā tākai Baylage ki ngā hei kei roto i te tāke hei.

Ngā hua o te kirihou

- Ko te pai o te baylage kāore he mahi tatari mō ngā kaiwhakahaere ahuhenua kei te noho i ngā wāhi mākū, kia maroke rawa te pātītī kātahi anō ka puru ki roto i ngā pēre.
- He pai kē ake ngā pātītī he mea tohu i roto kirihou mō ngā kararehe i te hei.



Ārani: He Tauira Hei Whakaatu Ehara i te Mea Pūmau te Rapihi

nā Alan Bagnall



I piki atu a Tākuta Mōhio ki te ātamira i te kura o Pencarrow ki te tuku i tana kauhau. Nā te kura i tono atu ki a ia kia haere atu. I a ia e haere atu ana i te ātamira i te whiuwhiu ia i ētahi ārani e toru. (He wahine āhua whakahihī tēnei Tākuta Mōhio).

“Kua kitea e au tētahi tauira whakamātautau ngāwari noa iho hei whakaatu, ehara i te mea pūmau te rapihi.” I a ia e kōrero ana i te tihore ia i ana ārani.

Ka hoatu a Tākuta Mōhio he wāhanga ārani ki ia o ngā tamariki, ā, ka kī, “Nāianei e toru noa iho ngā kiri kei ahau.”



“Ka tāpukehia e au te kiri tuatahi ki roto i te māra. Ka kainga e ngā noke, ā, ka mōmona ake te māra.”

“Ka hoatuhia e au te kiri tuarua ki te kaihe o taku hoa noho kāinga, ā, ka tapahia e au te kiri tuatoru kia noho hei ngaku, ka waiho ki runga ki te whata o te matapihi whakamaroke ai i roto i te rā. Mehemea kāore i te wera, i te maroke tō whata matapihi; me mea koe ki te whakamaroke i tō kiri i roto i tētahi oumu mahana, tētahi kāpata whakamaroke kākahu rānei. Ka taea e koe te tāpiri atu tētahi kiri maroke ki ngā keke hua rākau hei whakareka ake i ngā keke. He pai ki ētahi te ngaungau kiri torouka.”

“Nā, ka kitea i te tauira whakamātautau me ngā ārani e toru nei, ehara te rapihi i te mea pūmau!”

Ka pātai atu a Debbie, “Pēwhea ake ngā pepa tākai takoha? Kāore hoki he take o te pepa ka tihaetia ana kia puta te takoha!”

Ka whakahoki atu a Tākuta Mōhio, “He mea nui tou ngā pepa kua tihaetia. Ka taea te pēpēhi hei poraka, ka taea rānei te hangarua hei pepa hou anō.”

Ka whakaotia e Tākuta Mōhio tana kauhau mā te whiuwhiu, te tihore me te tohatoha i ētahi atu ārani. Kātahi ka haere katoa rātau ki waho ki te papa tākaro ki te kimi rapihi. Ko te mate kē kua kore e kitea e rātau tētahi mea e whakaaro ana rātau he rapihi. Ohotata ana kua whakaaro kē rātau he pū wairākau ātaahua, pū wairākau mōmona ngā uho āporo me ngā kiri paraoa. Ko ngā toenga pepa kua rite kē ki ētahi pepa toi pai, ā, tae atu ana ki ngā pounamu kirihou, kua rite kē te āhua ki tērā o roto i tētahi pepa whakairo. Mai i reira ka mōhio rātau he mahi tino uaua ki te kimi rapihi.



Hoki Atu Hoki Mai Ko Aua Mea Anō

nā Bob Kerr

Mōhiti

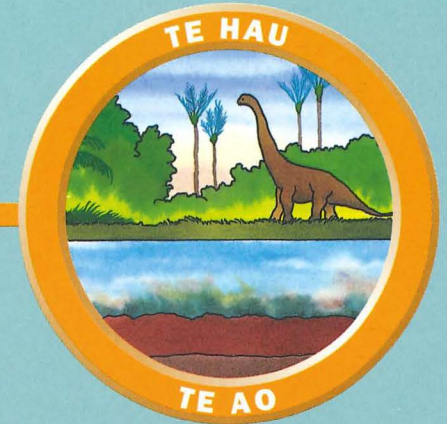
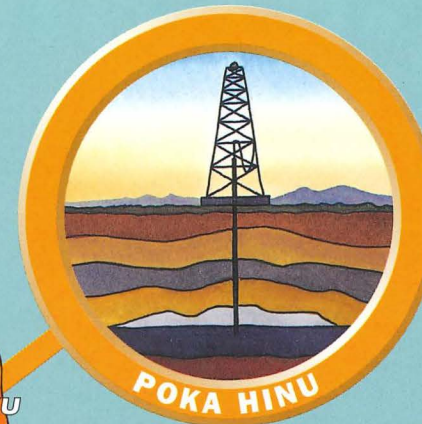
Poraka

Ngā
Raparapa o
ngā hū

Wairaka ngaiaku

Tarau
tāngari

Hū kirikau



Kākahu Pounamu Kirihou

nā Rupert Alchin

Aue! He ata hōtoke makariri, he ata tino mātao tēnei, ā, kua āta whakaritea e koe ngā kākāku tika mō te kura. Kei te kī mai a Māmā me whakarite ko ngā kākāhu mahana, kākāhu kauawhiawhi. Tērā pea ka whakamau koe i te poraka wūru me tētahi tiakete mahana rawa. Engari tērā anō pea ka mea koe ki te mau i tētahi mea rerekē atu. Pēwhea tō whakaaro ki te mau pounamu kirihou? Kia kitea te kanohi o Māmā! Tōna tumeke!

Ehara noa i te mea tino rerekē. Mehemea i hangaia tō tiakete mā te *Ecofleece* kāti kei te mau koe i tētahi mea he mea hangarua, mai i ngā pounamu unu kirihou he mea whakamahi anō. Ko te kupu “hangarua”, ko tōna tikanga he tango i ngā rapihi ka huri ki te hanga mea hou, mea whai kiko.

Ko te PET, koinei te ingoa mō tētahi kirihou whakahirahira e whakamahia ana hei hanga pounamu unu. Mehemea ka purua e koe tō pounamu wairēmana ki roto i te paepae “hangarua”, tērā kei te tonoa e koe hei hanga i tētahi tiakete ātaahua. Anei te āhua o ngā mahi.

Tuatahi

Tuatahi ka tukuna te pounamu ki te wheketere hangarua. I reira ka kurutētia, ka tapatapahia kia noho hei kongakonga pakupaku.



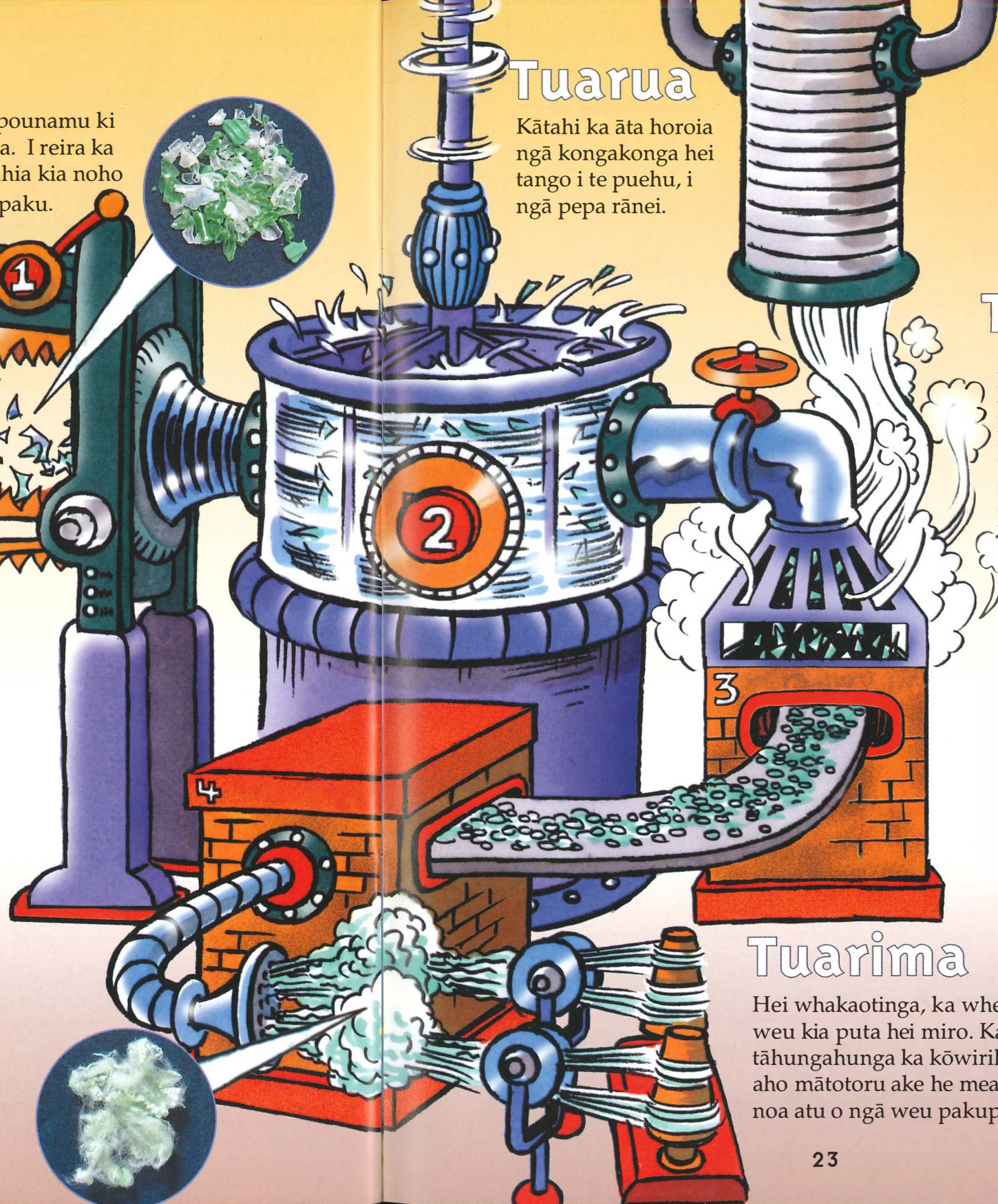
Tuawhā

Ka rewatia anō ngā pōkarakara nei, ā, ka hangaia hei aho e kīa ana he weu. (Kua kohia anō e koe tētahi pizza ka kume i te tīhi? He āhua rite te tīhi, he mea rewa ki te kirihou rewa.) Otirā, ko ngā weu o ngā PET kirihou, kāore e mahia ana ēnei mā te tō. Engari, panaia ai te kirihou rewa mā roto i ngā puare paku kei te waha o te ngongo, ā, ka puta atu i tērā taha pēnei i ētahi tuaina pakupaku nei, ka whakamārō ka rīrapa pēnei i ētahi wūru miro tāhungahunga.



Tuarua

Kātahi ka āta horoia ngā kongakonga hei tango i te puehu, i ngā pepa rānei.



Tuatoru

Kātahi ka rewatia ngā kongakonga kia noho hei pōkarakara paku. I tēnei wā kua rite te āhua ki ētahi poria pakupaku.

Tuarima

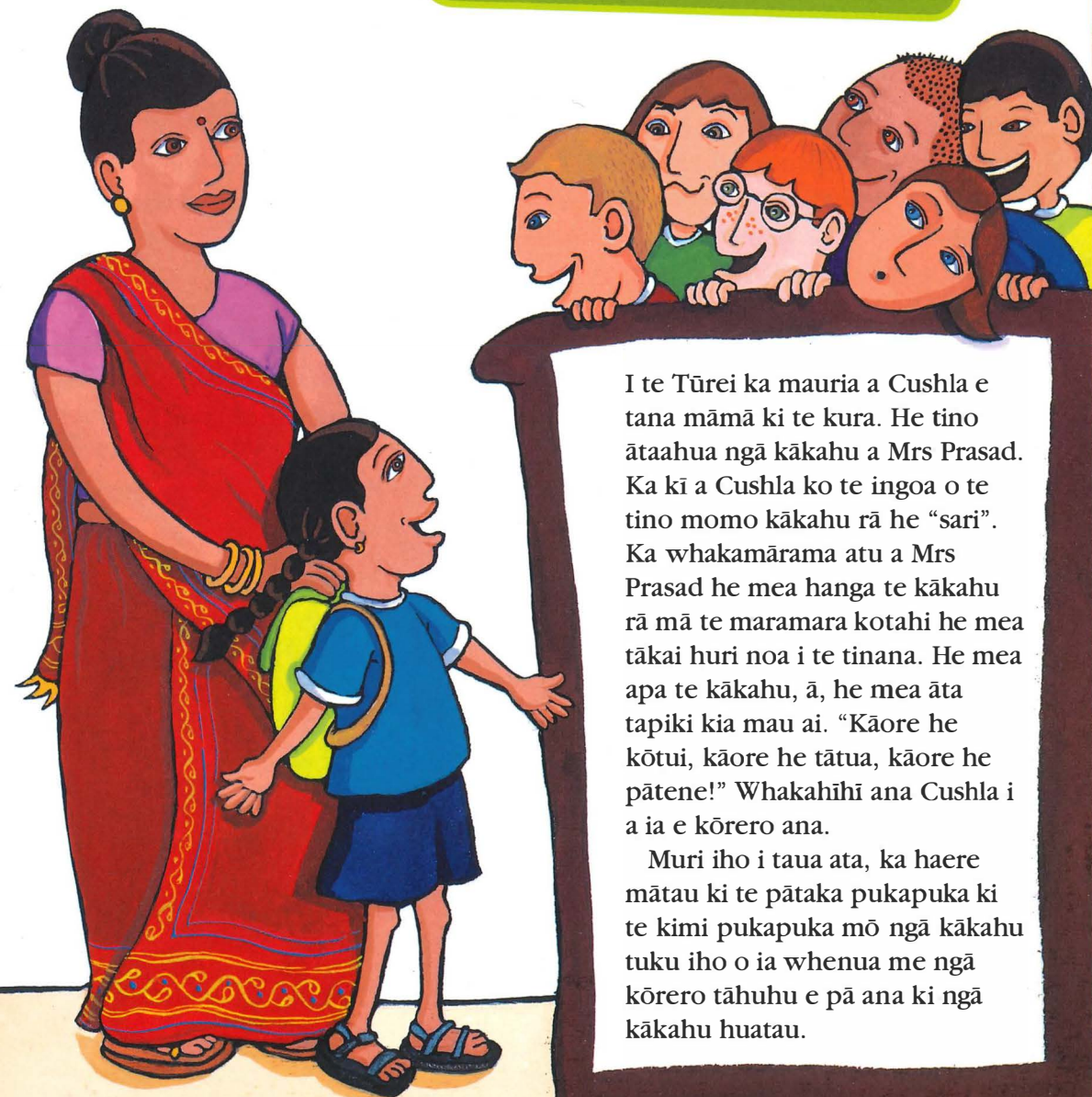
Hei whakaotinga, ka whenu ngātahitia ngā weu kia puta hei miro. Ka tōia ngā puia tāhungahunga ka kōwirihia kia huri ai hei aho mātotoru ake he mea hanga mai i te maha noa atu o ngā weu pakupaku.

Ka taea te whakamau he wairākau ki te miro, ka raranga, ka whatu rānei kia noho hei maramara. Ko te ingoa o te maramara nei ko Ecofleece: Ko "Eco" i te mea he ngāwari ngā pānga o tēnei āhuetanga ki te taiao, me "fleece" nā te mea he ngohengohe, he tāhungahunga, he tino mahana te maramara nei.



Te Take e Mau ana ngā Tamariki o Rūma 3 i o rātav Kākahu

nā Barbara Beveridge



I te Tūrei ka mauria a Cushla e tana māmā ki te kura. He tino ātaahua ngā kākahu a Mrs Prasad. Ka ki a Cushla ko te ingoa o te tino momo kākahu rā he "sari". Ka whakamārama atu a Mrs Prasad he mea hanga te kākahu rā mā te maramara kotahi he mea tākai huri noa i te tinana. He mea apa te kākahu, ā, he mea āta tapiki kia mau ai. "Kāore he kōtui, kāore he tātua, kāore he pātene!" Whakahihī ana Cushla i a ia e kōrero ana.

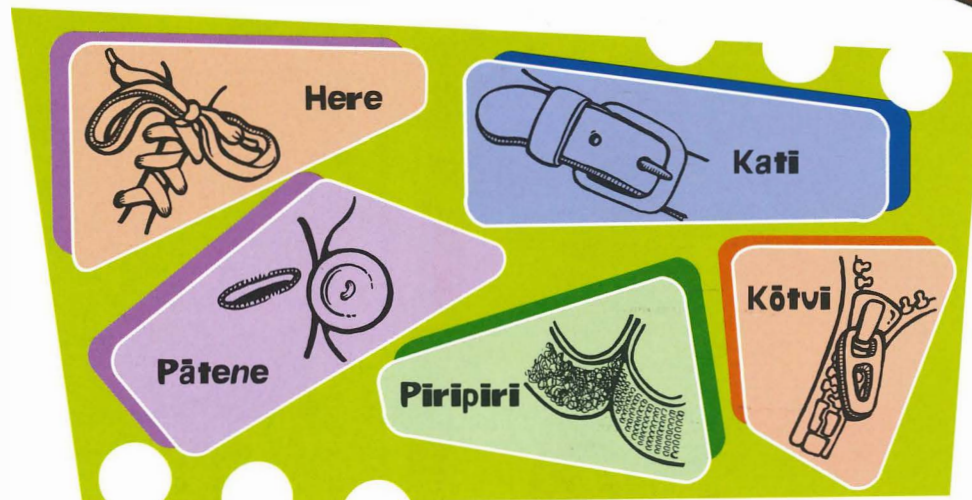
Muri iho i taua ata, ka haere mātau ki te pātaka pukapuka ki te kimi pukapuka mō ngā kākahu tuku iho o ia whenua me ngā kōrero tāhuhu e pā ana ki ngā kākahu huatau.

I kitea e Jason tētahi pukapuka he pikitia i roto o ngā tāngata o Roma e hia rau tau rā ki muri.

“Titiro ki tēnei tangata”, ko Becky tērā. “Pēnei tonu kei te mau hīti ia. Pēwhea rā tana mau kia kore ai e makere.”

Ka kī ake a William, “Ko tēnei tangata, he pine kei tana pokohiwi kei te whakamau i tana hīti”.

Kātahi ka whakaritea e mātau me titiro mātau ki ō mātau ake kākahu me ō mātau hū kia kite ai mātau pēwhea te whakamau o ēnei, “te take rānei e mau tonu ana ki ō mātau tinana”. Ka tuhia e Donna he mahere:



Ka kī ake a James, “Ki taku whakaaro me puru e tātau te rāhiteke ki runga ki te mahere. Ka taka taku tarau tākaro mehemea kāore he rāhiteke. Pēwhea ō mātau kākahu o raro?”

Ka whakahoki atu a Donna, “Āe. Rāhiteke. He aha ake?” Anei ētahi atu mea i whakaarohia e mātau:



I purua e mātau ēnei ki tētahi atu mahere nā te mea kāore he tangata i te mau i ngā mea nei i taua rangi. Kātahi ka whakaritea e mātau kia hangā he kauwhata pou mā te whakamahi i te mahere tuatahi. Koinei te mea i mahia e mātau.

1. Ka kautehia e mātau te katoa o ngā tamariki e mau ana i ngā taputapu whakamau rerekē. Hei tuhi i tēnei i whakamahia e mātau he mahere tatau. I kitea e mātau i te mau ētahi o ngā tamariki i ētahi taputapu whakamau rerekē, e rua, e toru rānei.

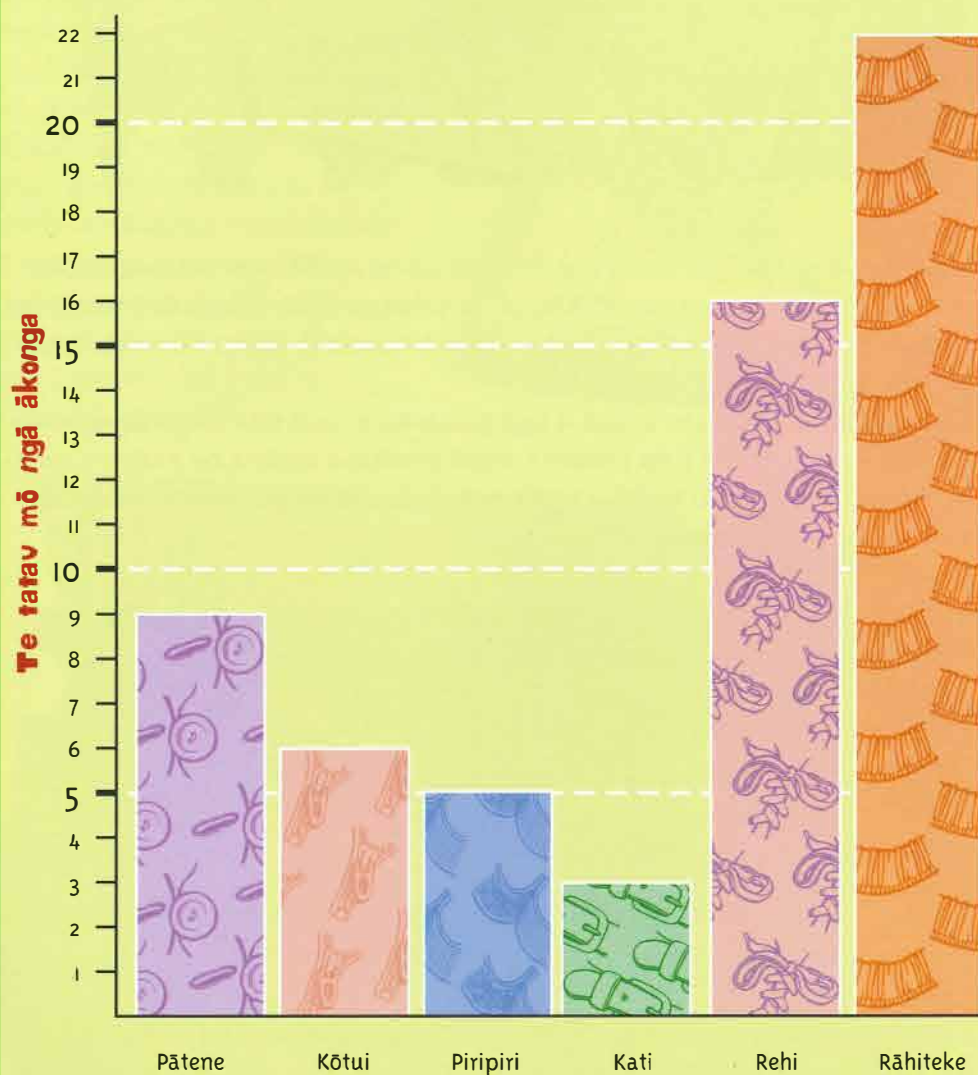
Te Mea	Tatau (Te tatau o ngā ākonga)
Pātene	
Kōtvi	
Piripiri	
Kati	
Rēhi	
Rāhiteke	

2. Ka tīkina e mātau ētahi pepa kauwhata ka rūri whakarunga mai i te 1 ki te 22 i te taha. Koinā te tokomaha o ngā tamariki i tō mātau akomanga i taua rangi. Kātahi, i te taha whakararo ka tuhia e mātau ngā ingoa o ngā taputapu whakamau.

3. Ka kautehia e mātau ngā tatauranga i runga i tā mātau mahere ka whakamahi pene ngohe ki te puru kara ki runga ki ngā kauwhata.

Ināianei, kei te whakaaro mātau i pēwhea ai te tangata i te wā kāore he rāhiteke.

Kauwhata Pou: Taputapu Whakamau Kāhau i Whakamahia e tō mātau Akomanga



Ngā momo taputapu whakamau

He ngāwari te hanga tauira, ā, he pai ki te titiro atu. Ka titiro ana koe ki tētahi tauira, hoki atu hoki mai ka kite koe i taua mea anō, pērā i: iti, waenganui, rahi, iti, waenganui, rahi.

Ngā Tauira

nā Julie Ellis

Anei he mea kua whakarārangitia hei tauira i runga anō i te nui, te āhua, te kano rānei. I pēhea te whakatauira i aua mea? Tirohia ngā tauira, ka hanga mahere pērā i te mea i runga i te whārangi 31, ā, ka puru i te tohu whakaae ki roto i te pouaka tika.

tahi





e rua

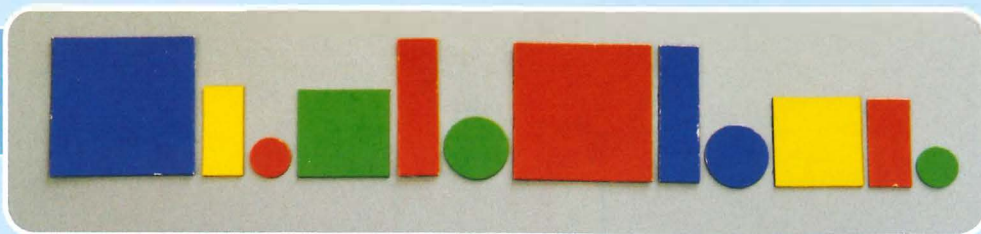


e toru



e whā

e rima



e ono



	tahi	rua	toru	whā	rima	ono
āhua						
rahi						
kano						

Nā ka taea e koe te kōhi ētahi o ngā mea nei ka hanga i tētahi tauira. Tuatahi me whiriwhiri kia toru, kia whā rānei ngā mea. Purua ki roto i tētahi rārangi. Mahia anō taua rārangi me ētahi atu mea e toru, e whā e rite ana. Tērā, hoki atu hoki mai he rite tonu te rahi, te kano, te āhua rānei o ō mea. Nā, me mahi kōrua ko tō hoa ki te whakamātautau i ā kōrua tauira. Tētahi o kōrua ki te whakamātau i tauira a tōna hoa, ā, ka whai atu tērā ki te whakamātau i tāu. Anei ētahi tauira pārekareka he hanga mā koutou: motokā taonga tākaro, matire, mataono, whakapiripiri, anga, rau, reta, pene rānei.

KUPU WHAKAMĀRAMA

a

anuhe *caterpillar*
apa *pleated*
au *fume*

h

hangarua *recycle*
hauwhā *quarter*
hōtoke *winter*
huatau *fashionable*

k

kāpehu (Eng) *compass*
kati *buckle*
kauawhiawhi *cosy*
kautaka *wilt*
kauwhata pou *bar graph*
kiri *peel (noun), rind*
kiriho *plastic*
kirikiri *sand*
kitakita *bacteria*
kongakonga *flake, chip*
kotira *sprout*
kōtui *zip*
kōwiri *twist*
kurutē *crush*

m

maramara *cloth*
mātotoru *thick*
mauti *silage*
mea whakamau *snap fasteners*
memene *smile*
miraka pē *yoghurt*
miro *yarn, cotton*
mōkihi *parcel*
mōmona *rich (fertile)*

ng

ngongo *hose*

o

opeope *rinse*
oumu *stove, furnace*

p

paitini (Eng) *poison, pollute*
pākācano *pod*
pākau *wing*
pātene (Eng) *buttons*
pātiti *grass*
pepa ngātatahi *cardboard*
perehi (Eng) *braces*
perepere *counter*
pīhuka *hook*
pine *brooch, pin*
pine taura *toggle*
piripiri *velcro*
poka *drill*
pōkai *fold*
pōkarakara *pellet*
poururu *frown*
pū wairākau *compost*
puare *hole*
pūhanga *bundle*
puia *tuft*
pūtūmata *incinerator*

r

raima (Eng) *lime*
raparapa *sole (of shoe)*
raranga *weave*
ratarata *molten*
raumati *summer*
rēhi (Eng) *lace*
reihuka *lactose, lactic*
rewa *melt*
rīrapa *matted*

t

tāhungahunga *fluffy*
taiao *environment*
takahurihuri *spinning*
tāke hei *haystack*
tāpiapia *sticky*
tapiki *tuck*
tāpuke *bury*
tarau tāngari *jeans*
taupoki *lid*

tīhore *peel (verb)*

tipua *giant*

tohetaka *dandelion*

tohu *preserve*

torouka *raw*

tuaina (Eng) *twine = string*

u

uho *core*

w

waikawa *acid*
waipupū *soda*
wairaka ngaiaku *nylon parka*
wairākau *dye*
weu *fibre*
whakapinepine *stapler*
whakapiripiri *sticker*
whakarongoa *tan (verb)*
whakatahe *drain, clear*
whakatipu *breed*
whata *shelf, sill*
whatu *eye*
whatu huru *knitting*
whawhao *pack (into)*
wheketere (Eng) *factory*
whenu *spin (into yarn)*
whitianga *diameter*
whiuwhiu *juggle*
wūru miro *cotton wool*

Ngā mihi

Kei te mihi ake Te Pou Taki Kōrero ki a Rosemary Hipkins (Te Kura Takiura o Poneke), mō tāna mahi arotake i te pukapuka nei me Ngā Tuhinga mā ngā Kaiwhakaako. Kei te mihi atu hoki ki ngā kaituhi me ngā kaitāpikitia, rātou ko ngā kaiwhakaahua. Otirā, tēnā koutou katoa.

Oranges: An Experiment to Prove That Rubbish Does Not Exist, mana pupuri © Alan Bagnall 1999

Seeds, mana pupuri © K.E.Anderson

Smile! mana pupuri © Diana Noonan

What Goes Around Comes Around, mana pupuri © Bob Kerr 1999

How to Wear a PET, mana pupuri © Te Karauna 1999

How the Children of Room 3 Keep Their Clothes On, mana pupuri Barbara Beveridge 1999

Make a Spinner, mana pupuri © Jane Buxton

Eggs in the Nest, mana pupuri © Jane Buxton

My Amazing Plant, mana pupuri © Jane Buxton

Patterns, mana pupuri © Julie Ellis

Ko ngā whakaahua kei ngā whārangi e whai ake nei: 2, 3 (te mea o raro), 4 (te mea o raro), 5 (te mea o raro) nā Julia Brooke-White; 3 (te mea o runga), 4 (te mea o runga), 5 (te mea o runga), 10 - 11 (ngā mea paku), 14 (te kau) nā G.R. (Dick) Roberts; 10 -11 (te mea nui), 14 (te mea o raro i te taha mauī) nā Diana Noonan; 12 (te mea o runga i te taha mauī) nā Digital Stock; 24 nā Dean Zillwood. Ko ngā pikitia kei ngā whārangi e whai ake nei: te uhi, 6-7, 25-28 nā Ali Teo (nā Richard Washbourn ngā hoahoa); 8 nā Jane MacDonald; 9 nā Clive Taylor; 15-17 nā Bob Kerr; 20-23 nā Lorenzo Van Der Lingen.

Ko ngā whakaahua nā G.R. (Dick) Roberts, mana pupuri © G.R. (Dick) Roberts

Ko ngā whakaahua nā Diana Noonan, mana pupuri © Diana Noonan 1999

Ko te whakaahua nā Digital Stock, mana pupuri © Digital Stock

Ko te whakaahua nā Dean Zillwood, mana pupuri © Dean Zillwood

Ko te whakaahua nā Julie Ellis, mana pupuri © Digital Stock

Ko te pikitia nā Bob Kerr, mana pupuri © Bob Kerr 1999

Mana pupuri © Te Karauna 1999 i ngā pikitia me ngā whakaahua kai te toe.



Ko *Tūhono*, he rārangi kōrero
tēnei he mea tātai hei
whakaatu i te tūranga o te
pūtaiao me te hangarau i
roto i te horopaki o te
koiora o ngā ākonga, ia rā.

Ko ngā kōrero me ngā tuhinga nei, he
tīmatanga tēnei hei wero i ngā ākonga,
ngā rōpū, ngā akomanga rānei; ki te
whakahaere i ētahi atu tino hōparatanga.

Ko te whāinga o ngā hei mahi nei arā, he
whakaoho ake i te harakoa o ngā
akoranga pūtaiao, pāngarau me te
hangarau.

I hangaia a *Tūhono* 1 mō ngā ākonga e
mahi ana i ngā taumata 1 ki 2 o te
marautanga o Aotearoa.

 MINISTRY OF EDUCATION *Te Tāhuhu o te Mātauranga*

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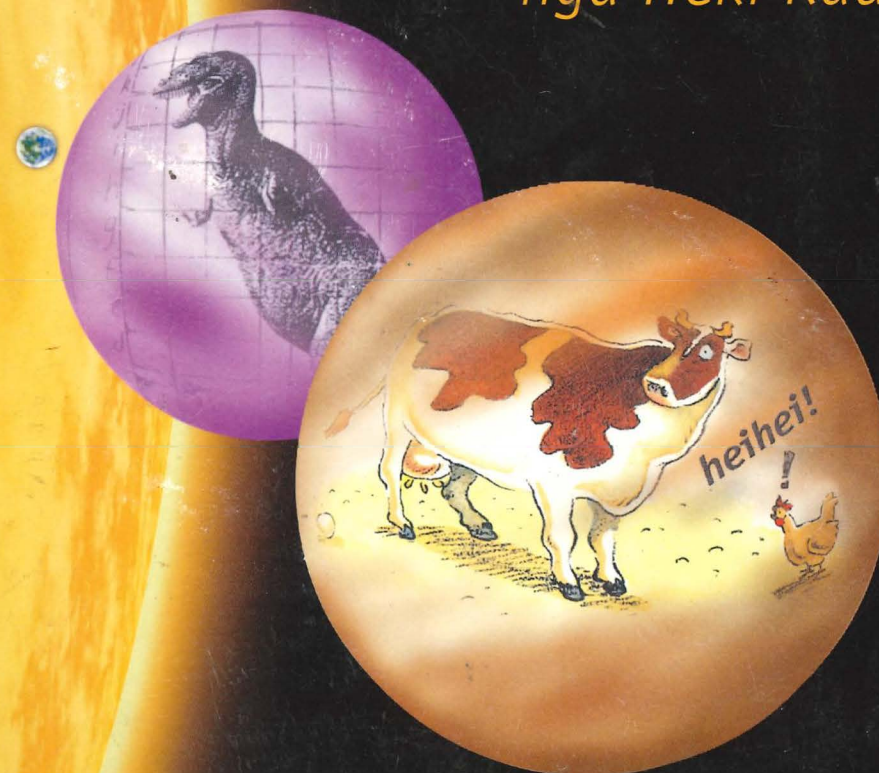
Tūhono 1

1999

*Ngā Take e pā
ana ki te Rā*

*Me Pēwhea e Taea ai
te Ine Mokotuaui?*

*Miraka Heihei me
ngā Hēki Kau*



Ngā Mihi

Kei te mihi atu Te Pou Taki Kōrero ki ngā kaituhi i whakaae mai kia whakamāoritia ā rātau tuhinga mai te rārangi pukapuka o Connected, ā, kia tāngia ki roto i a Tūhono. Kei te mihi anō ki ngā pukenga toi me ngā kaiwhakaahua. Ko te mihi whakamutunga ki a Ross White, nānā ēnei kōrero i whakamāori. Otirā, tēnā koutou katoa.

Shadow Sleeps mana pupuri © Ma'ara Taia Scheel 1996
Gifts from the Sun mana pupuri © John O'Brien 1995
Sun Facts mana pupuri © Te Karauna 1998
Clocks with a Difference mana pupuri i te kōrero me ngā whakaahua © Bill Keir 1998
How Do You Measure a Dinosaur? mana pupuri © Trish Puharich 1994
How Much Do They Eat? mana pupuri © Te Karauna 1998
Make a Shadow Clock mana pupuri © K.E. Anderson 1998
Open It! mana pupuri © Diana Noonan 1996
Hen's Milk and Cow's Eggs mana pupuri © Joy Cowley 1998
What Do You See? mana pupuri i te kōrero me ngā whakaahua © Clare Bowes 1998
A Number Grid Game mana pupuri © Jane Buxton 1998

Ngā pikitia me ngā whakaahua:

Ko te pikitia kei te whārangi 2, nā Ross Jones tērā, ā, ko ngā mea kei ngā whārangi 3-5, nā Ruth Paul ērā. Nā Richard Washbourn ngā pikitia kei ngā whārangi 6-7 me 26, ā, ko ngā mea kei ngā whārangi 8-11, nā Judith Künzle ērā. Kei ngā whārangi 20-25 me 27-31 ngā pikitia a Phillip Webb. Nā Clare Bowes te whakaahua kei te whārangi 13, ā, ko ngā whakaahua kei ngā whārangi 14-17, nā Bill Keir ērā. Kei ngā whārangi 18-19, ngā whakaahua a Nick Clarkson rāua ko Fiona Esau. Kei Te Karauna © te mana pupuri i ngā pikitia me ngā whakaahua kei te toe.

Ētita: Paora Te Kakapawaihō Tibble
 Kaihoahoa: Richard Washbourn

I whakaputaina tēnei kōrero i te tau 1999 mō te Tāhuhu o te
 Mātāuranga e Te Pou Taki Kōrero Whāiti, Pouaka 3293,
 Te Whanganui ā Tara, Aotearoa.

Pūmau te mana.
 Ngā tono ki te kaiwhakaputa i te pukapuka.

ISBN 0 478 23004 4
 Nama Take 23004
 Tuhinga a ngā Kaiwhakaako: Nama Take 23005



Ngā Ihirangi

Kōrero Paki

Kei te moe te Ata 8
 nā Ma'ara Taia Scheel

Ngā Kōrero Pono

Ngā Takoha a te Rā 3
 nā John O'Brien

Ngā Take e pā ana ki te Rā 6
 nā Rhonda Moselen

Ngā Karaka Rerekē 14
 nā Bill Keir

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 nā Diana Noonan

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 nā Clare Bowes

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 nā Jane Buxton

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 nā K. E. Anderson

Te Pou Taki Kōrero
 Te Whanganui ā Tara

TE HANGA Karaka Ata

NĀ K. E. ANDERSON

E whai ake nei ngā rawa
hei hanga karaka ata:

Tētahi rākau hāngai Ētahi rākau paku
Ētahi tohu whakapiri He wati, he karaka rānei

Poua te rākau hāngai ki te whenua i
te wā e whiti ana te rā.
Tirohia te ata o te rākau ka tuhi ai
he tohu i te wāhi whakamutunga o
te ata mā te pou atu i tētahi o ngā
rākau paku ki te whenua.

Tirohia te wā. Tuhia te wā
ki te tohu whakapiri, ka
whakamau atu ai ki runga i te
rākau paku.

Tatari mō te kotahi haora. Purua
te rākau paku tuarua ki te wāhi
kei reira te mutunga o te ata
ināiane. Tuhia te wā ki runga i te
tohu whakapiri ka puru atu ai ki
runga i te rākau hou.

Ia haora me rite tonu tāu mahi pēnei.
Kua whiwhi karaka ata koe ināiane.
Ka taea e koe te whakamahi hei whakarite i te wā?



I ngā rangi makariri, ka mutu ana taku whakaheke ngaru mō te
haora kotahi, ngā haora e rua rānei, totoka ana taku āhua. I a au e
wiriwiri ana ka kimi au i tētahi wāhi whakaruruhau. Ka takoto au
kia rongo ai au i te mahana o te Rā, me ōna hihi hoki. Kāore noa e
roa kua mahana katoa au, ā, kua tino hākoakoa hoki.

He mea miharo te kite i te kaha o te pūngao e puta mai ana ki a
tātau mai i te Rā - tae noa atu ki ngā rangi makariri. Tōna wera me
tōna tiaho, he takoha tūturu ēnei ki a tātau o tēnei ao.

Ki te mutu te whiti o te Rā, ka tere tonu te makariri o te ao. Ka
matemate katoa ngā mea ora, ā, i te tino kaha o te mātao ehara anake
ko ngā moana ka totoka, ko te hau hoki ka pērā.

He poi ahi te Rā e kiki ana i ngā momo hau, ā, e hia mano nei
tōna rahi, i tō tērā mō te Ao. Ka kā tōna puku pēnei i te ahi karihi

nei, ā,
pērā
anō hoki
i tētahi
pahū karihi
mutunga kore.
Koinei te wera e
whakamahana ana
i a tātau, ā, hei
whakamārama hoki i
tō tātau rangi.

Ehara i te mea ko ēnei
momo pūngao anake kei te
puta mai i te puku o
Tama-nui-te-Rā.

He pūngao anō kei te puta mai,
ā, ko tētahi o ēnei ko te hihi katikati.
Kāore e kitea e tātau, engari he mea
tino mōrearea.

He tino kino te wera o te kiri o te
tangata mai i te hihi katikati. I tua atu
ka tūkinohia anō ō tātau whatu, ā, ka
pāngia te tangata i te mate pukupuku.
He rerekē tēnei pūngao i ērā mō te wera

me te kanapa o te rā, he mea kino tēnei. Me kore ake
tātau i te pekerangi, ā, koinei te mea kei te ārai kia
kore te hihi katikati e pā mai ki a tātau. Otirā, he
rawaka tonu te hihi katikati tērā ka pā mai ki a
tātau menā kāore tātau e tūpato.

Nō reira, ahakoa he makariri te rangi,
ka mutu ana taku whakaheke ngaru, he
rite tonu taku puru i taku pōtae ki runga
i taku māhunga, me te panipani i a au
ki te pare tikākā. Tino mahi ai au ki
te tiaki i a au mai i te hihi katikati.

Kia mutu rawa tēnā kātahi
anō au ka takoto i tētahi wāhi
whakaruruhau ki te rongu i
te mīharo o te mahana o
Tama-nui-te-Rā me
tōna kanapa. He
takoha mīharo
ēnei nā Tama-
nui-te-Rā.

Ko

nā Rhonda Moselen

Ko te Rā, he whetū tēnei.

Eke ana te wera o te Rā ki te 6 000 waeine mahana. Engari ko te puku o te Rā, he wera kē atu tēnei, ā, eke ana ki te tekau mā whā miriona waeine mahana!

Ko te wera o te rangi i Aotearoa, tata eke ana tēnei ki te 30 waeine mahana!

E eke ana te whitianga o te Rā ki te 1.4 miriona kiromita, engari ko te Ao he 12 756 kiromita noa iho tōna whitianga. Nō reira tata ana ki te 110 te whānuitanga ake o te Rā i tērā o te Ao.

te Rā

Eke ana ki te 150 miriona kiromita te tawhiti o te Rā mai i te Ao. Mehemea ka taraiwa koe i tō waka ki te rā, ā, ko te tere o tō haere he 100 kiromita i te haora, ka eke ki te 171 tau te roa o tō haerenga kātahi ka tae atu ki reira!

Nā, i te mea he tino tawhiti te Rā, kia taha rawa atu te waru meneti kātahi anō tātau ka kite i tōna mārāma.



150 000 000 km

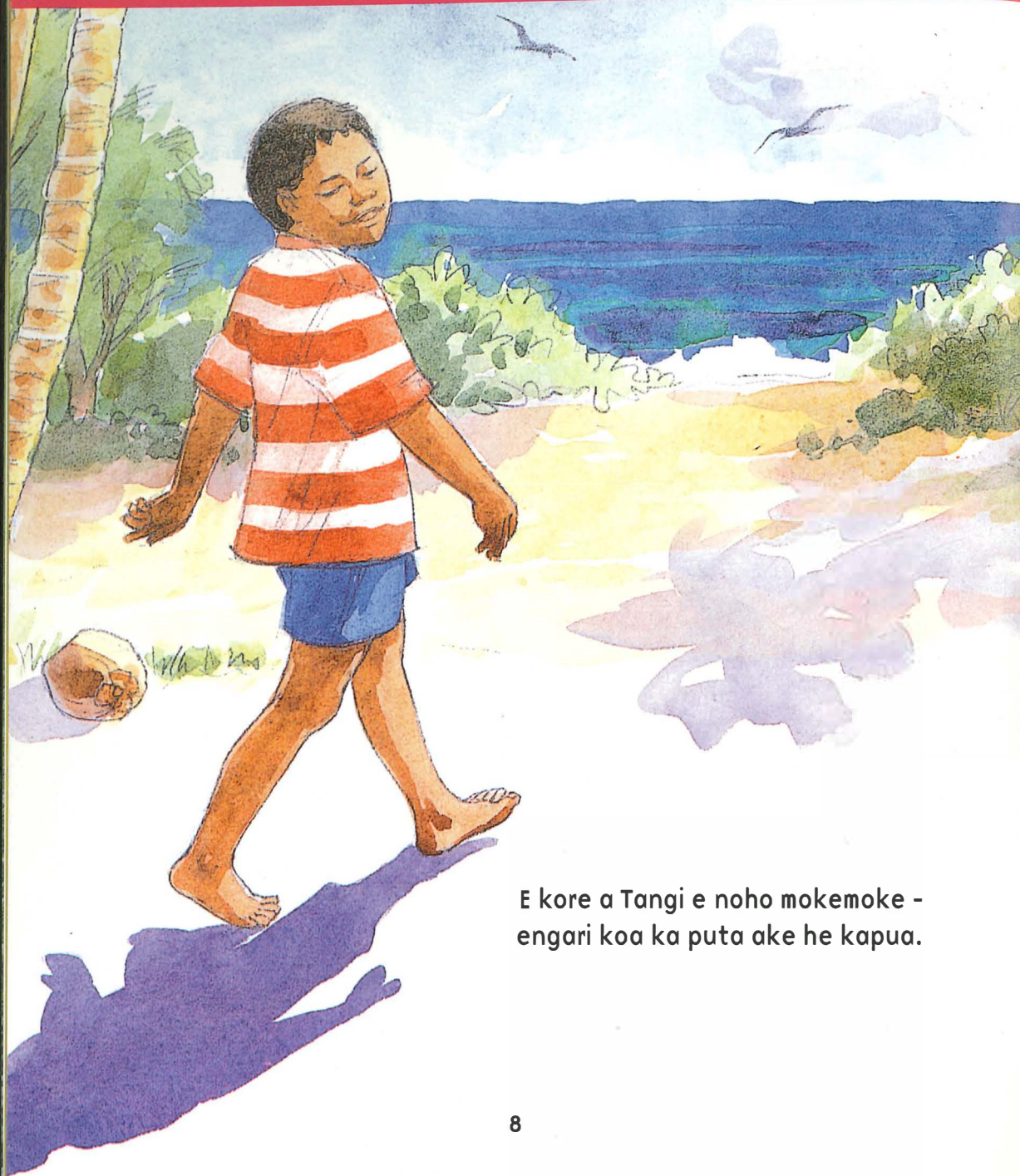


12:00 i te ahiahi mārama 12:08 i te ahiahi

I tua atu i te Rā, ko *Alpha Centauri* te whetū e tata mai ana ki te Ao. Eke ana ki te whā tau me te ono marama te roa o te wā ka taha atu kātahi anō tātau ka kite i tana mārāma. Me whakaaro ake koe ki tō pakeketanga ā te whā tau me te ono marama kei te heke mai. Koinā tō pakeketanga kātahi ka kite atu koe i te mārāma e wehe mai ana i *Alpha Centauri* i te rangi nei.

Ko te pekerangi kei te ārai atu i te nuinga o te hihi katikati kia kore e pā mai ki a tātau.

Hāna Kāpikāpā



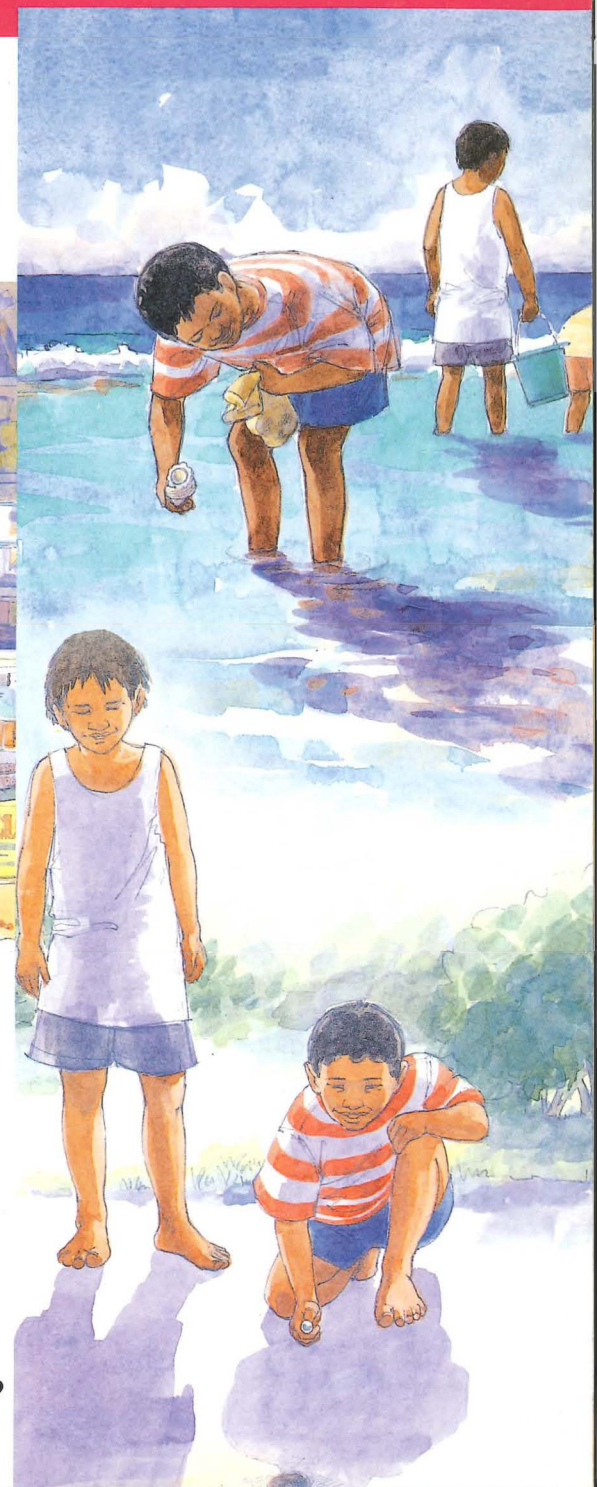
E kore a Tangi e noho mokemoke -
engari koa ka puta ake he kapua.

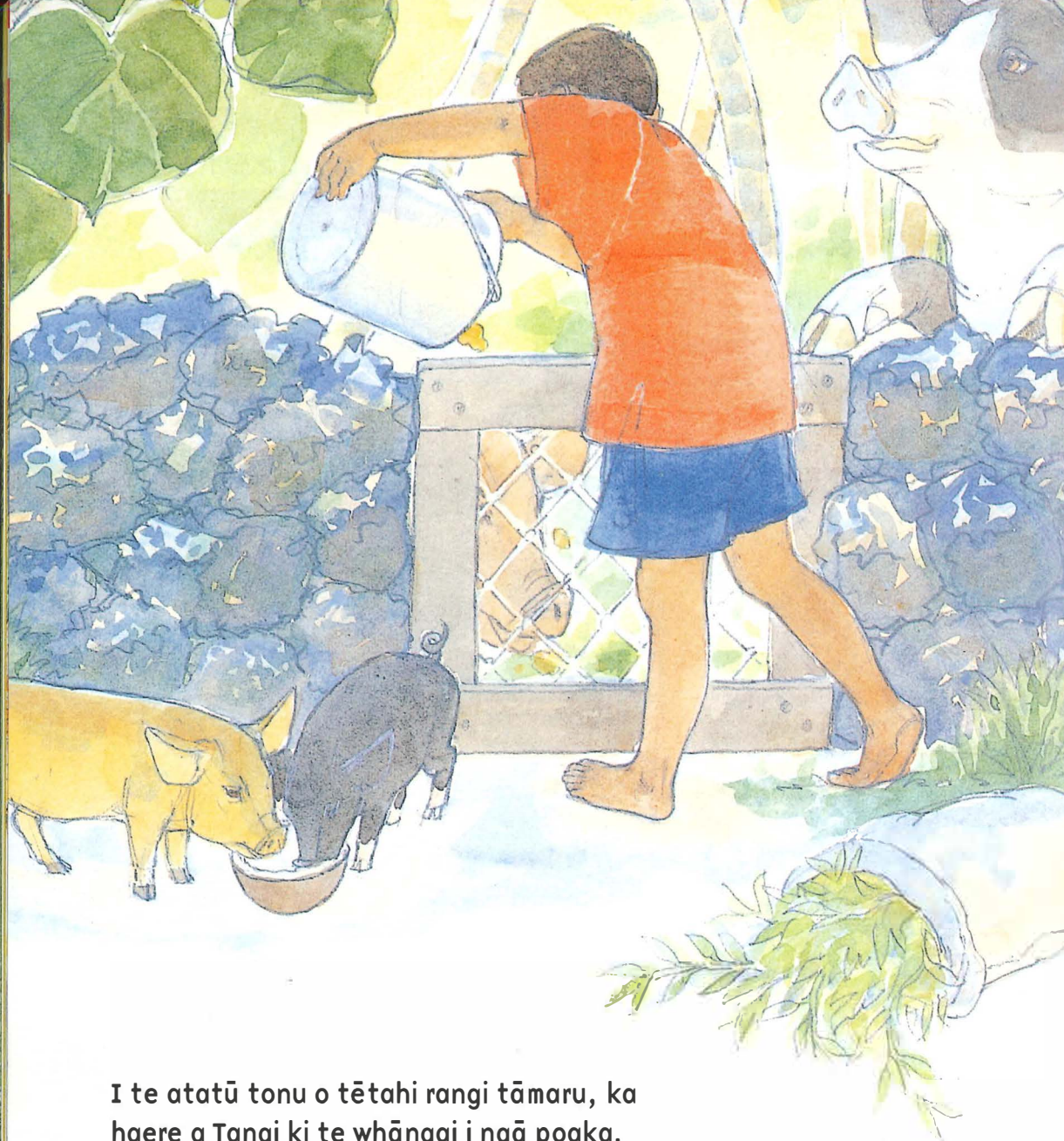
Ka haere ana a Tangi i te ākau ki
te kimi riri, ka kauhoe tana ata.



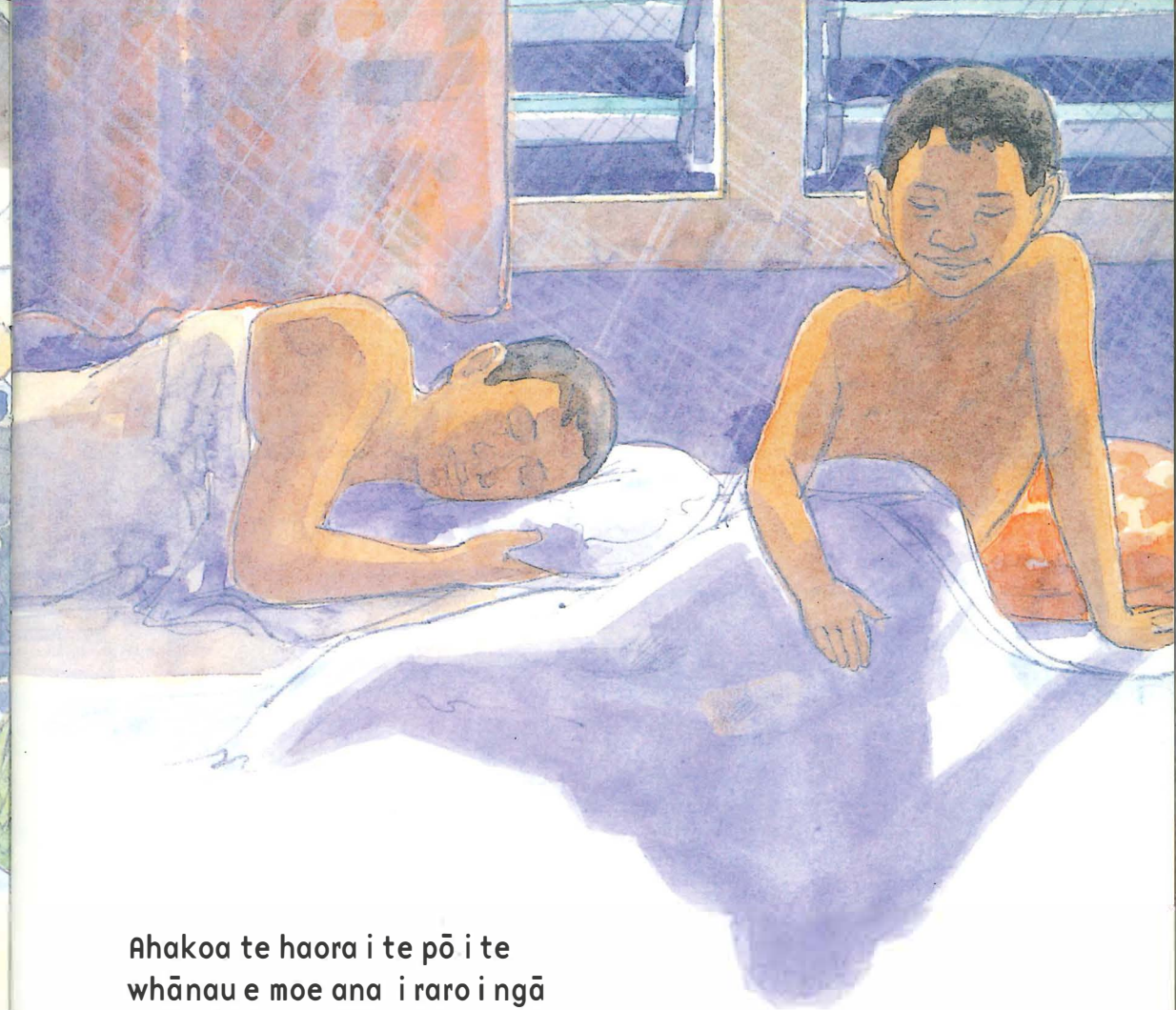
Ka haere ana a Tangi ki te toa ki
te tiki parāoa, ka whakapeke
tana ata.

Ka purei māpere ana a Tangi, ka
mahi tinihanga tana ata!





I te atatū tonu o tētahi rangi tāmaru, ka haere a Tangi ki te whāngai i ngā poaka. Kāore tana ata māngere e paku āwhina i a ia.



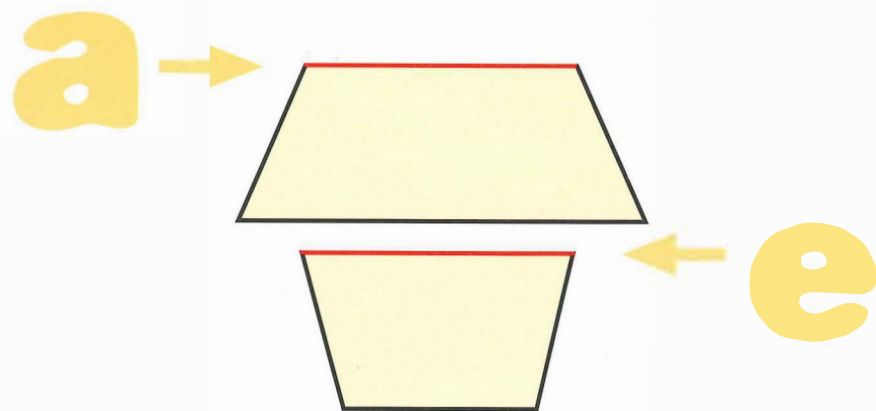
Ahakoā te haora i te pō i te whānau e moe ana i raro i ngā kupenga waeroa, kei reira tonu te ata o Tangi.

Noho noa ake ana a Tangi i roto i te ahoroa, kua puta ake tana ata.

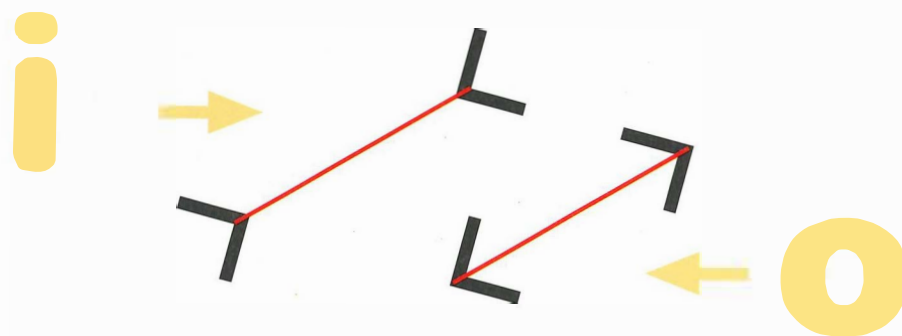
Ka kī atu a Tangi, "Tēnā me whakangā tāua, e Ata," ka tōia e rāua te hīti ki runga i ō rāua māhunga. "Ka kite i a koe āpōpō, e Ata."



Ō Karu



He roroa ake te rārangi whero “a” i te rārangi whero “e”?
Inea ngā rārangi nei kia kitea ai ko tēhea te mea roroa.



He roroa ake te rārangi whero “i” i te rārangi whero “o”?
Inea ngā rārangi nei kia kitea ai ko tēhea te mea roroa.

Hoki!

nā Clare Bowes

I ētahi wā ka nukarautia tō roro kia
pōhēhētia kei te kite koe i tētahi mea
kāore koe i te kite. E kīa ana tēnei
āhuatanga he “tinihanga ā whatu.”



Kua tāngia tētahi tinihanga ā whatu ki runga i te pakitara
o runga ake nei. Titiro ki ngā matapihi me ngā ārai
kākārīki. Ko tētahi he matapihi tūturu, ā, ko tētahi he
mea peita noa. Ko tēhea, tēhea? Kei te kupu taka te
whakautu tika.

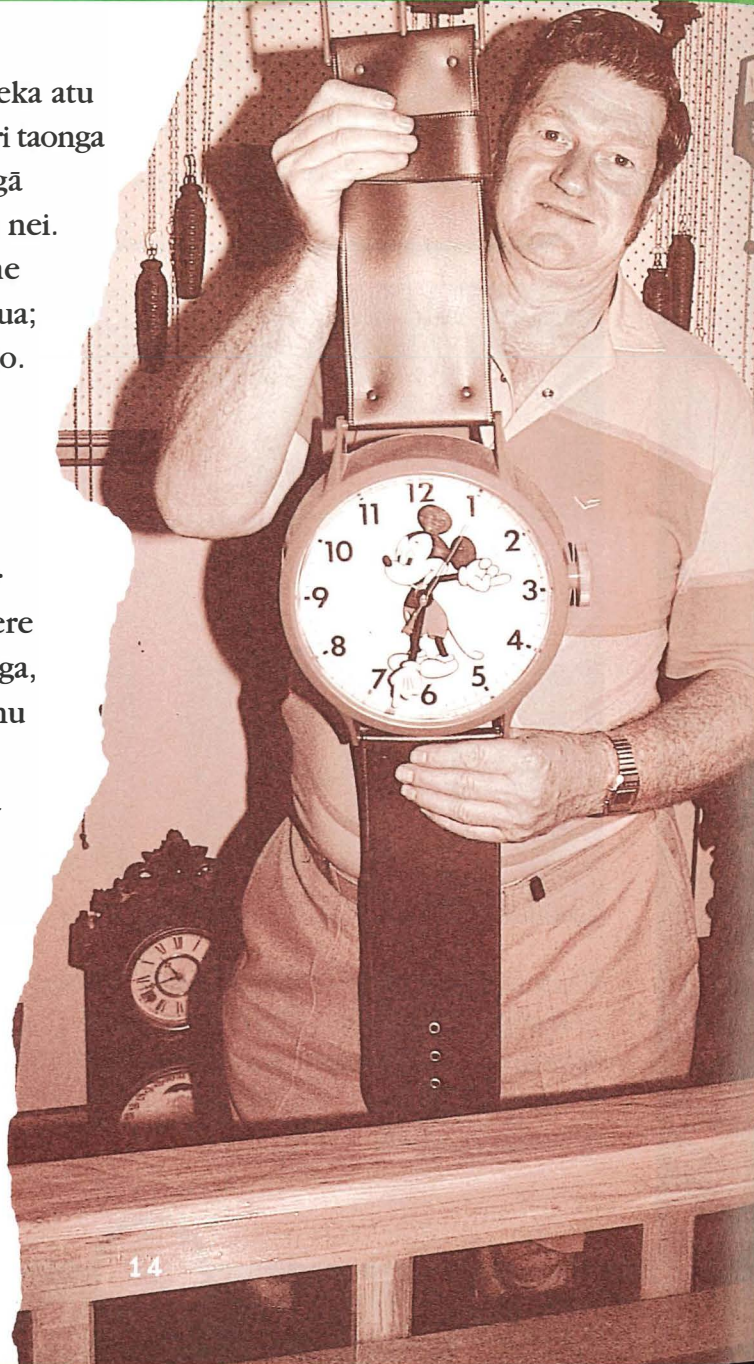
Ngā Karaka

Rerekē

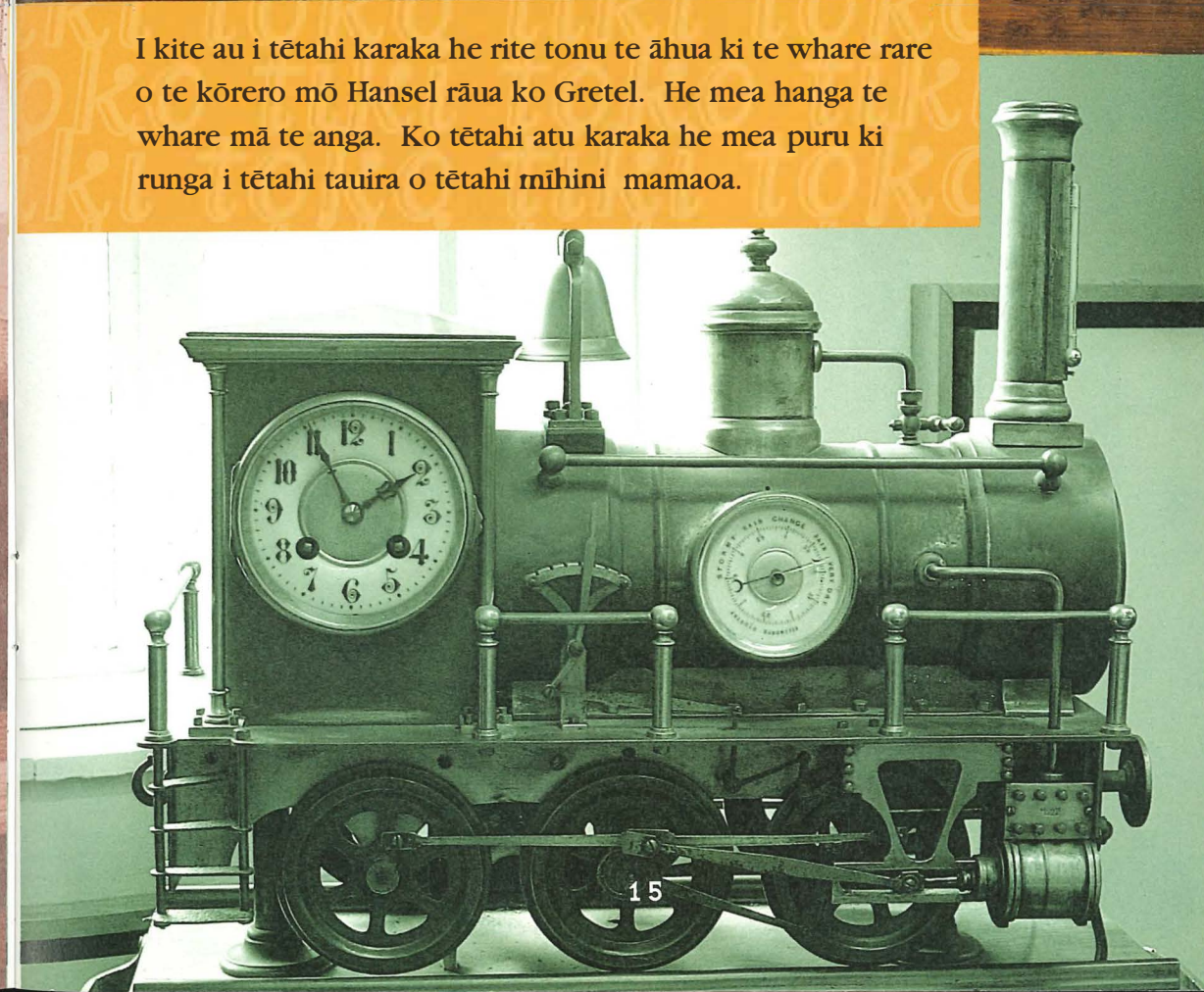
nā Bill Keir te kōrero me ngā whakaahua

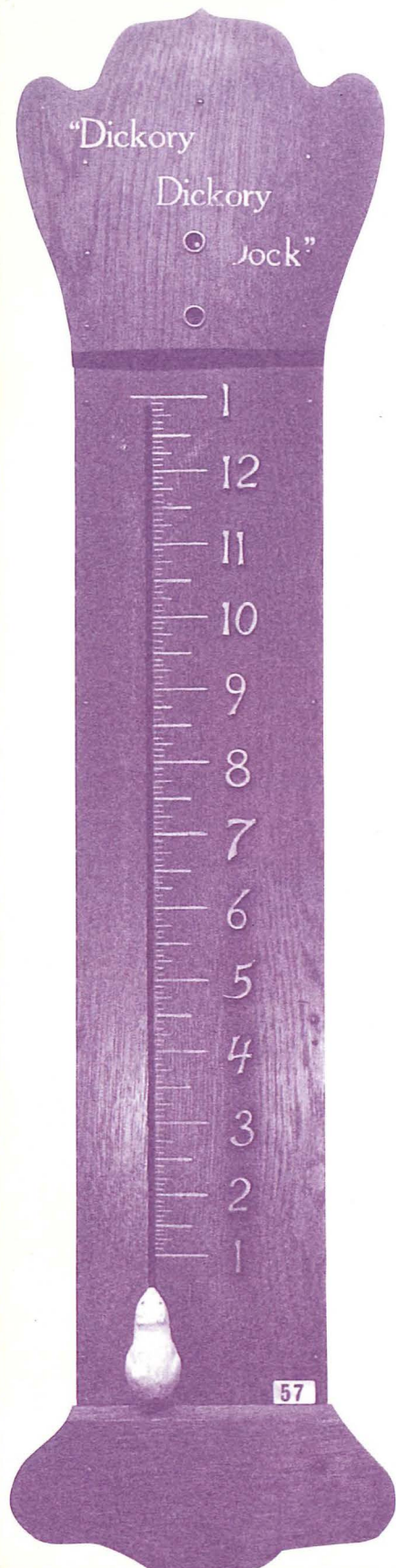
I a au i Whangārei ka peka atu au ki tētahi whare pupuri taonga rerekē. E hia rau nei ngā karaka i roto i te whare nei. Ko ētahi o ngā karaka he karaka ahurei, he ātaahua; ā, ko ētahi he tino tahito.

I hangaia ētahi o ngā karaka hei mahi whakangahau noa. I whakaatuhia mai e Mr Woods, te kaiwhakahaere o te whare pupuri taonga, tētahi karaka he rite tonu ki tētahi wati *Mickey Mouse* te āhua. He kaitā rawa hei takai ki tō ringa. Whata noa ai i runga i tētahi matau i te pakitara.



I kite au i tētahi karaka he rite tonu te āhua ki te whare rare o te kōrero mō Hansel rāua ko Gretel. He mea hanga te whare mā te anga. Ko tētahi atu karaka he mea puru ki runga i tētahi tauira o tētahi mīhini mamaoa.

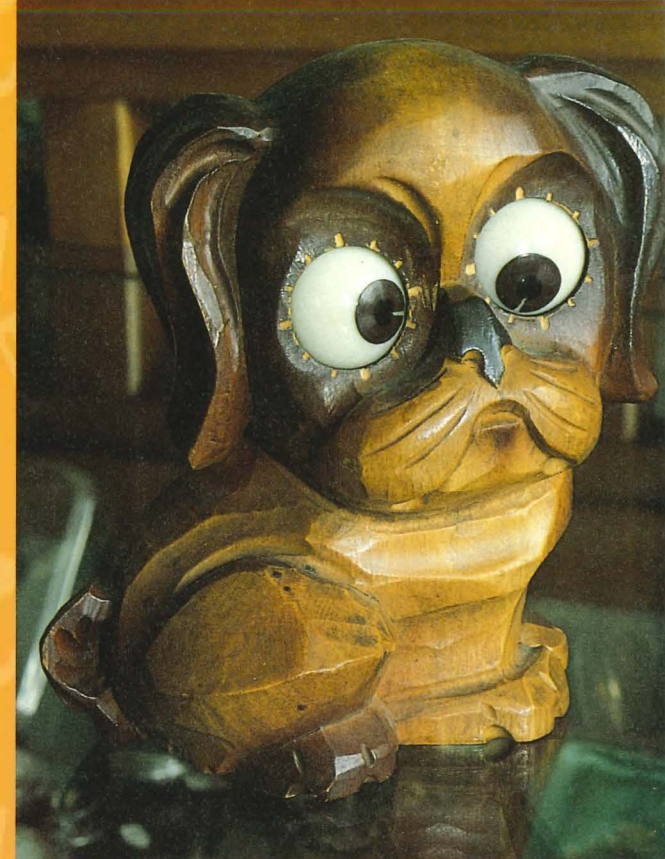




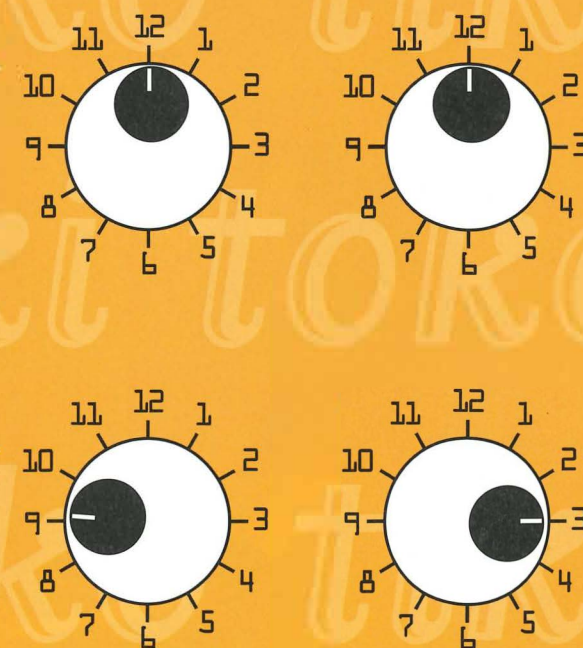
I tuhia te ingoa o tētahi o ngā karaka tino rerekē ki te tihi o te karaka, arā, *Dickory, Dickory, Dock*. Kā āta piki haere te kiore i te karaka whakaatu ai i te taima i a ia e haere ana. Ka tae ana ia ki te kotahi karaka, ka heke ia ki raro ki te papa ka tīmata anō - pērā tonu i te rotarota.

Ko tētahi o ngā tino karaka e hiahia ana au ko te karaka kuri rākau. Whakaatu ai ia i te taima mā te whakaoreore i ana whatu. Whakaatu ai tētahi whatu i te haora, ā, whakaatu ai tētahi i ngā meneti.

I te wā i tangohia te whakaahua nei ko 3:35 te wā. He aha te wā menā ka pēnei ana te āhua o ngā whatu o te kuri pakupaku nei?



kia pēnei rānei?



Huakina!

nā Diana Noonan

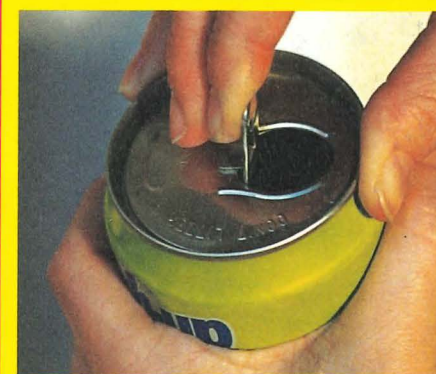
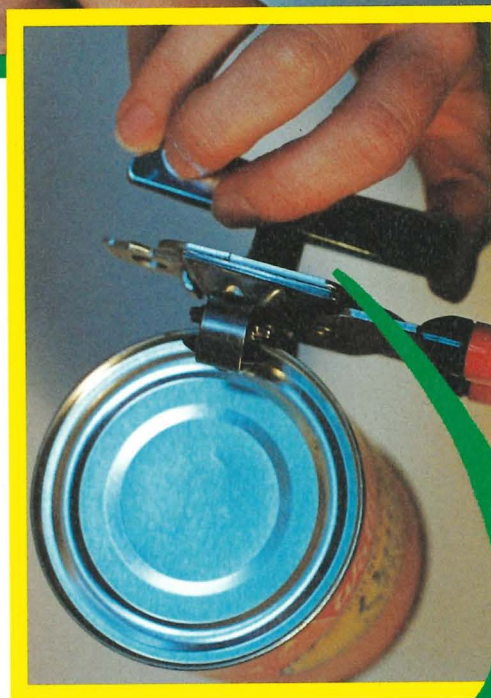
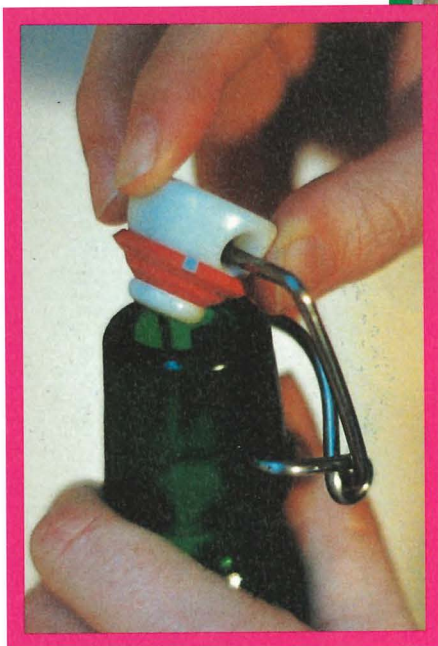
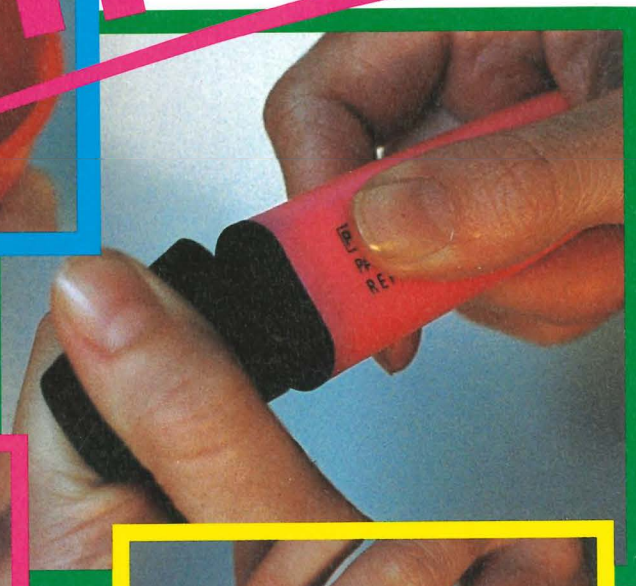
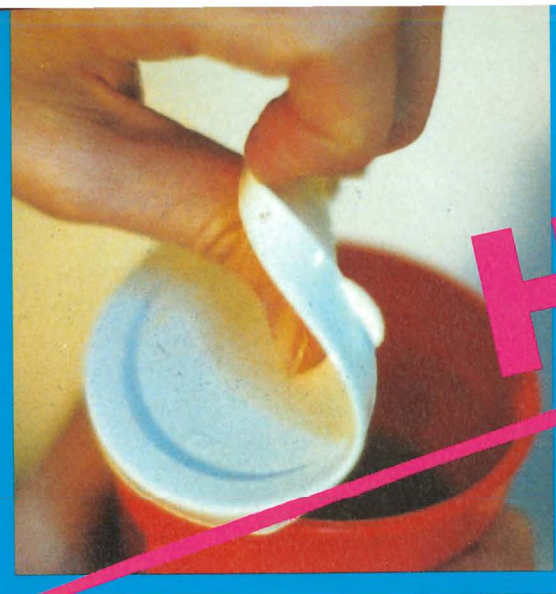
Kōwiria,
Takahuria,
Takawiria.

Pēhia, Tōia ki
raro, Poua ki
raro.

Takaia, Hikina,
Kumea ngā
porohia -

E hia kē ngā
momo taupoki!

Huakina!



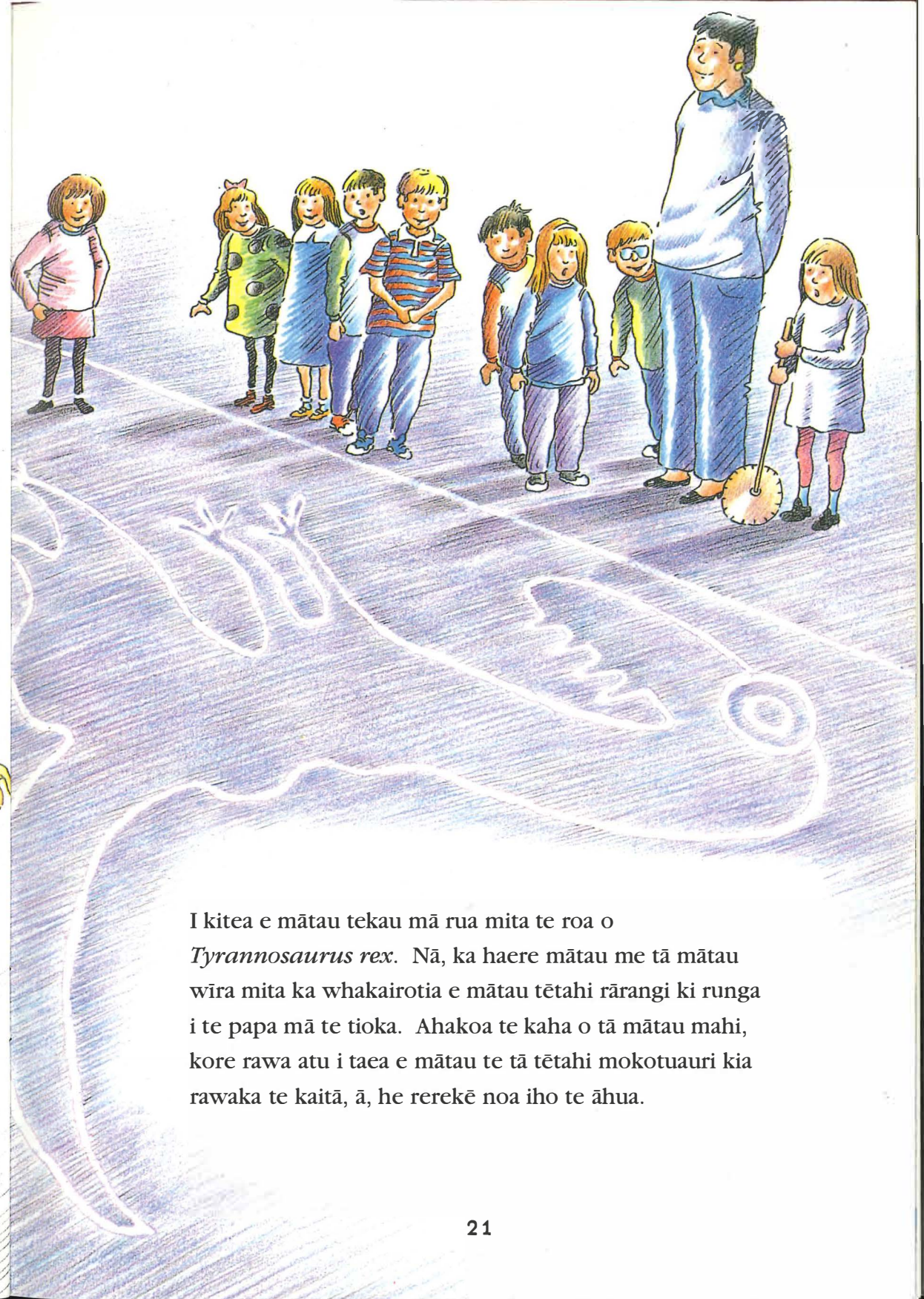
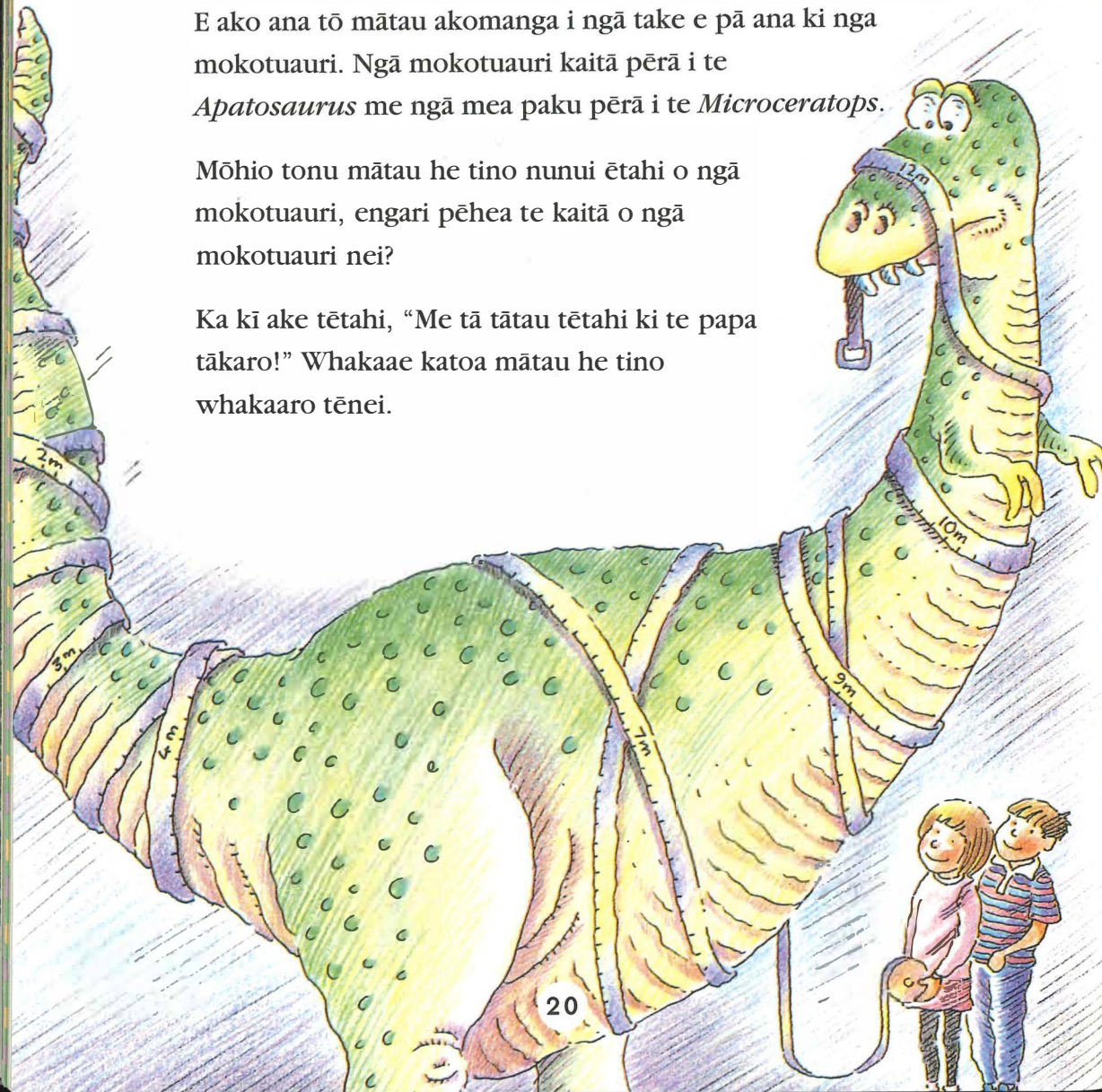
Me Pēwhea e Taea ai te Ine Mokotuaauri?

nā Rūma C1, Te Kura o Island Bay

E ako ana tō mātau akomanga i ngā take e pā ana ki nga mokotuaauri. Ngā mokotuaauri kaitā pērā i te *Apatosaurus* me ngā mea paku pērā i te *Microceratops*.

Mōhio tonu mātau he tino nunui ētahi o ngā mokotuaauri, engari pēhea te kaitā o ngā mokotuaauri nei?

Ka kī ake tētahi, “Me tā tātau tētahi ki te papa tākaro!” Whakaae katoa mātau he tino whakaaro tēnei.



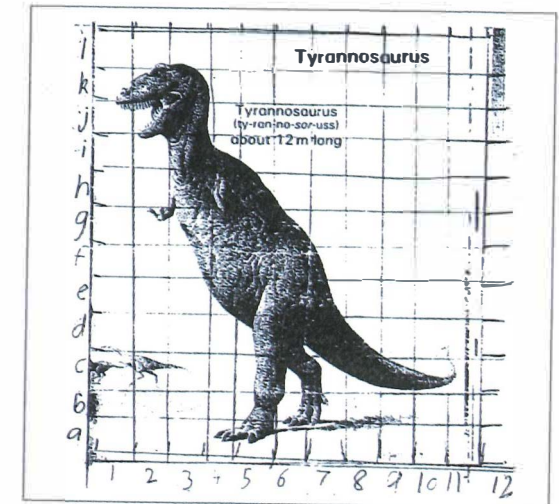
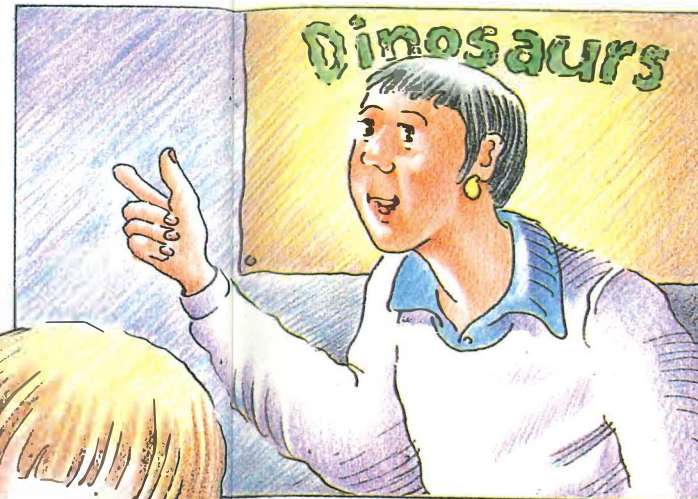
I kitea e mātau tekau mā rua mita te roa o *Tyrannosaurus rex*. Nā, ka haere mātau me tā mātau wīra mita ka whakairotia e mātau tētahi rārangi ki runga i te papa mā te tioka. Ahakoa te kaha o tā mātau mahi, kore rawa atu i taea e mātau te tā tētahi mokotuaauri kia rawaka te kaitā, ā, he rerekē noa iho te āhua.

I tā mātau kōrerotanga atu ki te kaiwhakaako mō tā mātau raruraru ka kī mai ia, “He take pāngarau tēnei!” Ka kī mai ia ka taea e mātau te waihanga tētahi pikitia rahi mai i tētahi pikitia iti mā te whakamahi tukutuku. Kua paku mōhio kē mātau ki te āhua o te whakamahi tukutuku. Engari i whakaaro tonu mātau he mea rerekē te whakamahi pāngarau ki te tā!

Koinei tā mātau mahere:

1. He mea whakaahua nā mātau tētahi pikitia o te *Tyrannosaurus rex*, ā, ka tā i tētahi tukutuku ki runga. I hangaia e mātau kia tekau mā rua ngā tapawhā te whānuitanga o tā mātau tukutuku, ā, kia tekau mā rua ngā tapawhā hoki tōna teitei. Kotahi henemita te ine o ngā taha o ia tapawhā.

2. I tuhia e mātau ētahi pū ki runga i te taha mauī o tā mātau tukutuku, ā, i tuhia anō ētahi nama ki te taha whakararo. Ka kite koe kei roto te whatu o te mokotuaui i 2k.



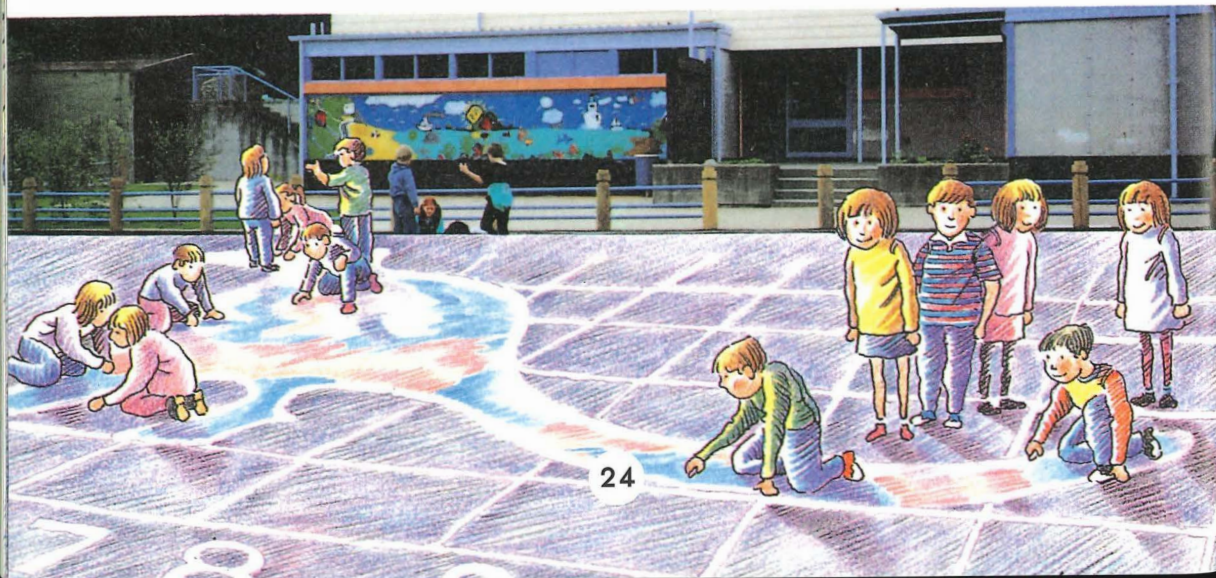
3. I te papa tākaro i tāia e mātau tētahi atu tukutuku - he mea rahi ake. He kotahi mita te rahi o te taha o ia tapawhā o tēnei tukutuku.



4. I tuhia e mātau ngā pū me ngā nama e rite ana ki ngā mea i runga i te tukutuku paku. E rua ngā akoranga pāngarau kātahi anō ka oti i a mātau te tukutuku nei!

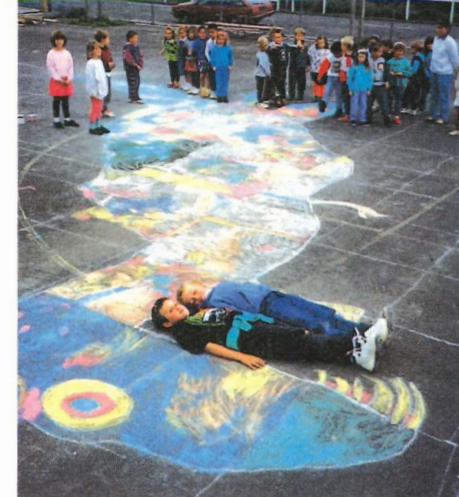


5. Muri iho ka titiro atu mātau ki ia tapawhā o te tukutuku paku. Ka tāia e mātau taua wāhanga o te pikitia ki te tapawhā e rite ana ki te mea o te tukutuku kaitā, pēnei nei.



24

He āhua teitei kē ake tā mātau *Tyrannosaurus* i te mea tūturu, engari he tika tana roroa. Tokorua o mātau ka uru atu ki roto ki tana waha. He mahi tino harakoa te mahi tā mokotuaui. Ahakoa te roa hoki o te mahi (ā, he nui hoki te tioka i pau) - tika tonu, he mahi whai hua tēnei. I tapaina tā mātau *Tyrannosaurus* ki tētahi ingoa Māori. I karangahia e mātau ko “moko nui ngarengare,” ā, ko te tikanga o te ingoa nei arā, he “ngārara whakamataku nunui.” Kāore noa i roa ka ngaro a moko nui ngarengare i te ua. Ka ngaro tā mātau mokotuaui pērā tonu i te katoa o ōna uri.



Haere rā
moko nui ngarengare!



25

He Tākaro

Tau Tukutuku

nā Jane Buxton

TĪMATA

2	3	6	5	4	9	5	2	1	7
1	8	6	4	3	9	5	7	2	6
3	7	6	3	4	5	8	9	1	2
6	4	5	2	7	6	1	3	8	9
9	8	4	1	3	6	5	7	2	

MUTUNGA

Whakaahua tēnei papatau, hangaia i tāu ake rānei.

Tuhia he rārangi mai i te tīmatanga ki te mutunga, kia rua tekau mā tahi anake ngā tau ka werohia e tō pene. Ka āhei te rārangi te haere mā te huarahi pae (↔), mā te huarahi poutū rānei (↕), engari mō te huarahi hauroki (↘↗), ā, kāore hoki e āhei te whakawhiti i a ia anō.

Tāpirihia te katoa o ngā tau i werohia e tō rārangi. Ko te whāinga he whakapipi i te taumata o ngā whiwhinga e taea ana e koe te whakatutuki. Ka āhei te hokihoki ki te mahi i runga i taua papatau anō, mā te whakamahi he pene kara rerekē i ia wā.

Tērā pea ka pīrangi koe ki te mahi pēnei me tētahi hoa, kia kitea ko wai ka whiwhi i te kaute nui.

TĪMATA

2	3	6	5
1	8	6	4
3	7	6	3
6	4	5	2

Miraka Heihei me ngā Hēki Kau

nā Joy Cowley

Ngā Kaiwhakaari:

KAIPĀMU MERE,
KAU,
HIPI,
HEIHEI,
KURI



KAIPĀMU MERE: Kia ora. Ko Mere ahau,
he kaipāmu ahau, ā, koinei aku kararehe. Koinei a Kau.

KAU: Mū-uuu

KAIPĀMU MERE: Ko Hipi tēnei.

HIPI: Pā-aaa

KAIPĀMU MERE: Ko Heihei tēnei.

HEIHEI: Heihei, heihei.

KAIPĀMU MERE: Ko Kuri tēnei.

KURI: Au au! Au au!

KAIPĀMU MERE: Tatari mai i konei, kararehe mā. Kei te haere
atu au ki te tiki i ā koutou kai.

Ka haere ia.



KURI: Au au! Me mahi tinihanga tātau ki a Kaipāmu Mere.

KAU: Mū-uuu. He aha te tinihanga?

HIPI: Pā-aaa. Me whakawhiti tātau katoa i ō tātau reo.

HEIHEI: Hei hei. Hei hei aha te tikanga o tō kōrero - me whakawhiti reo tātau?

HIPI: Pā-aaae mārika! He mahi kai pātītī noa iho tēnā. Māku e kōrero i roto i te reo o Kuri. Arā, pēnei nei - au au. Kuri, māu e whakamahi i tōku reo. Heihei, me mū koe pēnei i a Kau. Kau, māu te reo o Heihei. Aue! Kia mātaara, kei te hoki mai a Kaipāmu Mere me ā tātau kai.

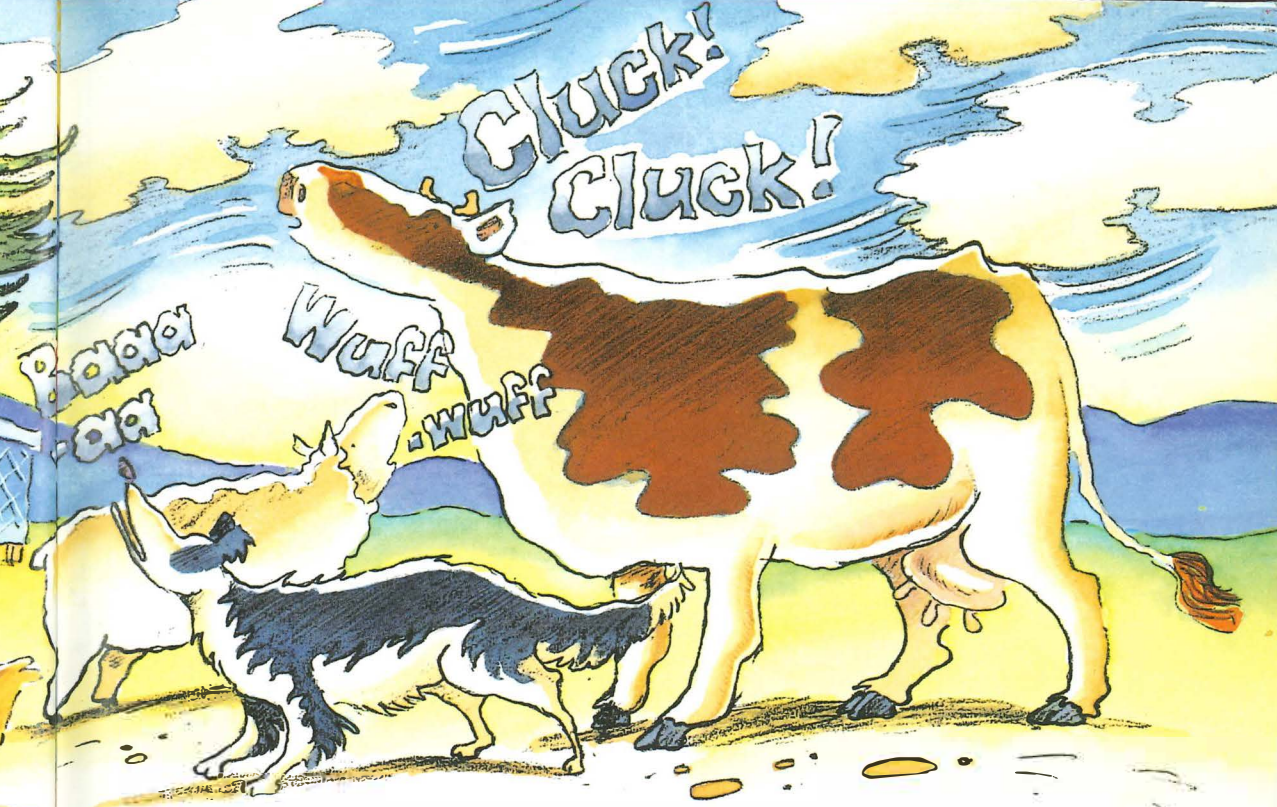
KAIPĀMU MERE: Kia kamakama kararehe mā. Anei, manaakitia te kai.

KURI: Pā-aaa. Pā-aaa. Kei te tino matekai au. Pā-aaa.

KAU: Kei te hemo kai mātau. Heihei, heihei.

HIPI: Auau! He aha koe i roa ai? Auau!

HEIHEI: Mū-uuu. Mū-uuu. Hōmai, hōmai. Mū-uuu.



KAIPĀMU MERE: Hika mā. He aha hoki tēnei hanga! Pēnei tonu taku kuri, he hipi ia. Ko taku hipi kei te pōhēhē he kuri ia. Ko taku kau kei te kōrero heihei ia, ā, ko taku heihei kei te pōhēhē he kau ia. Kore rawa atu tēnei tūmomo hanga i heipū i mua atu rā.

KURI: Kua hinga ia i a tātau!

KAU: E kore e mutu i a au te kata.

HIPI: Au auē. Aroha ana a Kaipāmu Mere.

HEIHEI: Mū-uuu. Kei te tino āwangawanga ia.

KAIPĀMU MERE: Kāti, kotahi anake te huarahi mā koutou. Me whakawhiti e au ā koutou kai. Anei Kuri, he pātītī pai, he pātītī kākārīki māu.

KURI: Pātītī? Kia mate rawa au kātahi anō au ka kai pātītī.

KAIPĀMU MERE: Kau, kei a koe ngā maramara kai mai i te kāuta.

KAU: Maramara kai o te kāuta. Auē! Te haunga hoki!

KAIPĀMU MERE: Anei Hipi. He kōiwi tahito tō kai.



HIPI: He kōiwi hipi! Ai! Kai a te kuri!

KAIPĀMU MERE: Ā, me koe Heihei, māu ngā hei nei.

HEIHEI: Hei aha hoki! Ko te hei nā, koinā ngā mea e whakawhānau ana au i aku hēki ki runga. E kore rawa au e kai i tēnā mea.

KAIPĀMU MERE: Noho mai rā kararehe mā. Kia pai tā koutou kai.

Ka haere ia.

KURI: Pātītī? Kāore au i te kata!

KAU: Mai i taku whānautanga, kāore anō au kia whāngaia ki ngā maramara kai o te kāuta!

HIPI: He aha rawa rā ia i kaha ai ki te hōmai i te kōiwi o tētahi o ōku whanaunga hei kai māku!

HEIHEI: Te kino kawa hoki o te hei.



HIPI: Me whakawhiti anō tātau ki ō tātau āhua tūturu, ō tātau reo, me ō tātau kai.

KURI: Au au mārika! Te reka hoki o te kōiwi nei.

KAU: Ka mū te wehi! He tino reka ki a au te hei.

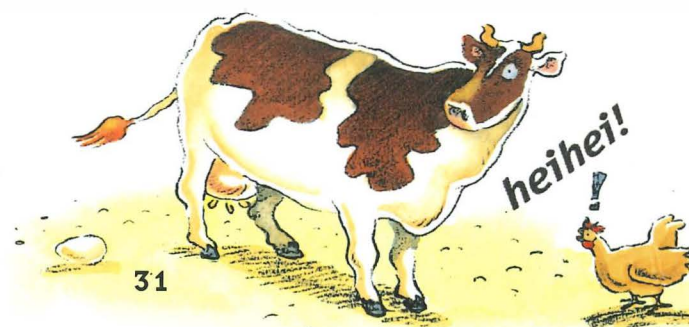
HIPI: Pā-aaai mutunga! Pātītī kākāriki, pātītī pārekareka hoki.

HEIHEI: Heihei! Koinā te mea pai ki ahau, he timotimo i ngā maramara kai o te kāuta.

Ka hoki mai a Kaipāmu Mere

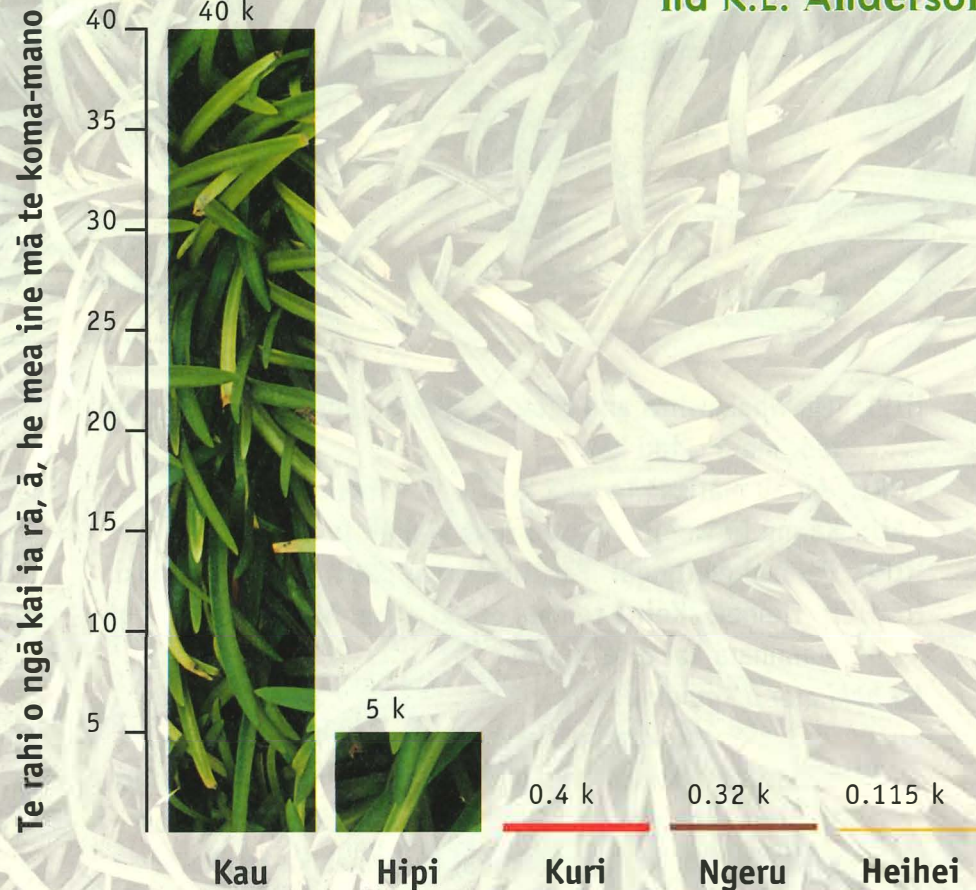
KAIPĀMU MERE: Ā, kua hoki anō koutou ki ō kōutou āhua tūturu. E rekareka ana ahau. Hipi, ka pōrangī noa iho tō āhua i roto i te maukākī kuri. Kuri, ka tino rorirori rawa atu tōu nei āhua pākira, mehemea ka kutikutia koe. Kāore anō au kia unu miraka heihei. Ā, e kore kore rawa atu ahau e hiahia ki te kai hēki kau.

nā Phillip Webb ngā pikitia



Pēhea te rahi o ā Rātau Kai?

nā K.E. Anderson



Ki tō whakaaro, he aha te take he kaha kē atu te kai a ngā kau me ngā hipi i tō ērā mō ngā kuri, mō ngā ngeru me ngā heihei?

Pau ana te tekau haora i ngā kau me ngā hipi, ki te kai pātiti. Ka taea anō e koe te whakarite te roa o te wā e kai ana ngā ngeru me ngā kuri?

KUPU WHAKAMĀRAMA

A ahoroa ahurei akoranga	bright moonlight unique, rare lesson
H hau hauroki hihi katikati hōpara	gas diagonal ultraviolet ray investigate, explore
I ine	measure
K karihi kōwiri(a)	nuclear twist
M mamaoa mokotuaui	steam dinosaur
P pahū karihi pākoro manu pare tīkākā pekerangi poutū pū	hydrogen/nuclear bomb birdcage sunblock ozone layer vertical letter
R rare	(Eng) lolly = candy
T takahuri(a) tāmaru tau tinihanga ā whatu tohu whakapiri totoka tukutuku	turn cloudy number optical illusion label frozen grid
W waeine mahana whakaahua whakapihi whakatutuki whitianga whiwhinga	celsius photocopy amass, pile up, tally up total achieve diameter score

Whārangi 13

Tohu: Āta tirohia ka kite koe kei raro tika iho te ata tūturu o te tuanui i a ia tonu, engari ko te ata he mea peita i raro i te pākoro manu, kei te tāhinga kē tēnā ki te taha mauī.

Whakahoki: Ko te matapihi kei te taha mauī te mea tūturu.

Tūhono Rua

1999



Ko Tūhono, he rāangi
kōrero, he mea tātai i te
tū o te pāngarau, o te
pūtaiao me te hangarau
i te horopaki o te ao o
ngā ākonga.

He tīmatanga noa iho ēnei tuhituhinga
hei wero i te hinengaro o ngā ākonga
ki te whakahaere whakaaro e pā ana
ki ētahi atu hōparatanga.

Ko te tikanga o ngā ngohe, he
whakaoho ake i te harakoa o ngā
akoranga pūtaiao, pāngarau me te
hangarau.

I hangaia a Tūhono Rua mō ngā ākonga
e mahi ana i ngā taumata 1 ki 3 o te
Marautanga o Aotearoa.

▲▲▲
~~~~~  
**TE TĀHUHU O TE MĀTAURANGA**  
Ministry of Education

ISBN 0-478-23698-0



9 780478 236989



He Ao Tauhou, he Ao Kōrekoreko

Te Purapura Nui Rawa Atu

Te Mīhini Piakamo



## Ngā Mihi

Kei te mihi atu Te Pou Taki Kōrero ki ngā kaituhi i whakaae mai kia whakamāoritia ā rātau tuhinga mai i te rārangi pukapuka ko *Connected*, ā, kia tāngia ki roto i a *Tūhono*.

He mihi anō ki a Carolyn English rāua ko Fiona Walls nō Te Whare Takiura o Pōneke mō tō rāua tirohanga ki tēnei kohinga kōrero. He mihi hoki ki a Susan Davies nō Te Whare Taonga Stanley, Kingfield, Maine, USA, mo tana arotake i te kōrero ko *The Steam-powered Car: Time for a Comeback?* me ētahi o ngā whakaahua hītorīa a roto. Kei te mihi hoki ki ngā ringatoi me ngā kaiwhakaahua. Ko te mihi whakamutunga ki a Hēni Jacob rāua ko Te Haumihiata Mason mō ā rāua mahi whakamāori i ēnei tuhinga. Tēnā koutou katoa.

*The Biggest Seed We've Ever Seen*, Connected 2 1999, mana pupuri © Jill MacGregor 1999  
*The Bubblegum Machine*, Connected 2 1999, mana pupuri © Vince Wright 1999  
*The Case of the Erupting Lawn*, Connected 2 1999, mana pupuri © Te Karauna 1999  
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Ētita: Pāora Te Kakapawaiho Tibble

Kaihoahoa: Stephen Pene

I whakaputaina tēnei pukapuka i te tau 1999  
 mō Te Tāhuhu o te Mātauranga  
 e Te Pou Taki Kōrero Whāiti, Pouaka 3293,  
 Te Whanganui a Tara

Mana pupuri © Te Karauna 1999

Pūmau te mana

Ngā tono ki te kaiwhakaputa i te pukapuka.

ISBN 0478236980

Nama take: 23698

He Tuhinga mā te Kaiwhakaako: nama take 23699

# Tūhono Rūa

1999

## Ngā Ihirangi



### HE PAKIWAITARA

Te Mīhini Piakamo *nā Vince Wright* 20

Ngā Poraka Pukutākaro *nā Derek Holton* 30



### HE KŌRERO PONO

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Te Pou Taki Kōrero  
 Te Whanganui a Tara



Ina tau ana te waikohu  
mō te katoa o te rā i Te  
Puku o Ōtākou, tērā e  
pōhēhētia kua whakatata  
mai anō a Rangi ki a  
Papatūānuku. Kua kore e kitea  
te kahu o te rangi, ā, kua kore  
e whiti te rā. Ka kaha kē atu  
te mātao o te hau o te takiwā,  
ā, kua mōhiotia he tino hukapapa  
kei te haere, arā, he 'hukatū'.

Kia noho rawa ki te 0  
Celsius, makariri ake  
rānei, mō te katoa o te  
awatea me te pō, hei reira  
ka tau te hukatū. Ina pēnei,  
kua kapi ngā mea katoa i te  
tioata hukapapa. Ko ngā peka  
more o ngā rākau, he mea  
whakapaipai ki te koi kōataata,  
ā, ka tipu haere tonu ēnei hanga.

# He Ao Tauhou, he Ao Kōrekoreko

nā Pauline Cartwright

Taihoa kua mā katoa, kua  
rerekē katoa te āhua o  
te taiao. Inā kē te  
ātaahua o te hukatū;  
me te mea nei ko  
tētahi whakarākei  
Kirihimete tino kaitā  
rawa atu. Ko te hau  
tonu e kōwatawata ana  
i te huringa o te wai o  
roto hei pata, ka heke  
haere ki raro.

Rerehua ana tērā te rau pātītī  
kotahi. Ko ngā whare  
pūngāwerewere me te mea nei he  
kupenga rauangi. Ko ngā pūtoi  
koi paina, ka rite ki tētahi momo  
poi huruhuru te āhua. Ki te roa  
tonu te hukatū e tau ana ki te  
whenua, tērā ka tipu tonu te  
hauhunga i runga i ngā taiapa  
matakupenga kia kapi rawa  
ngā mokowā, ā, kua tū mai  
hei pakitara tio.

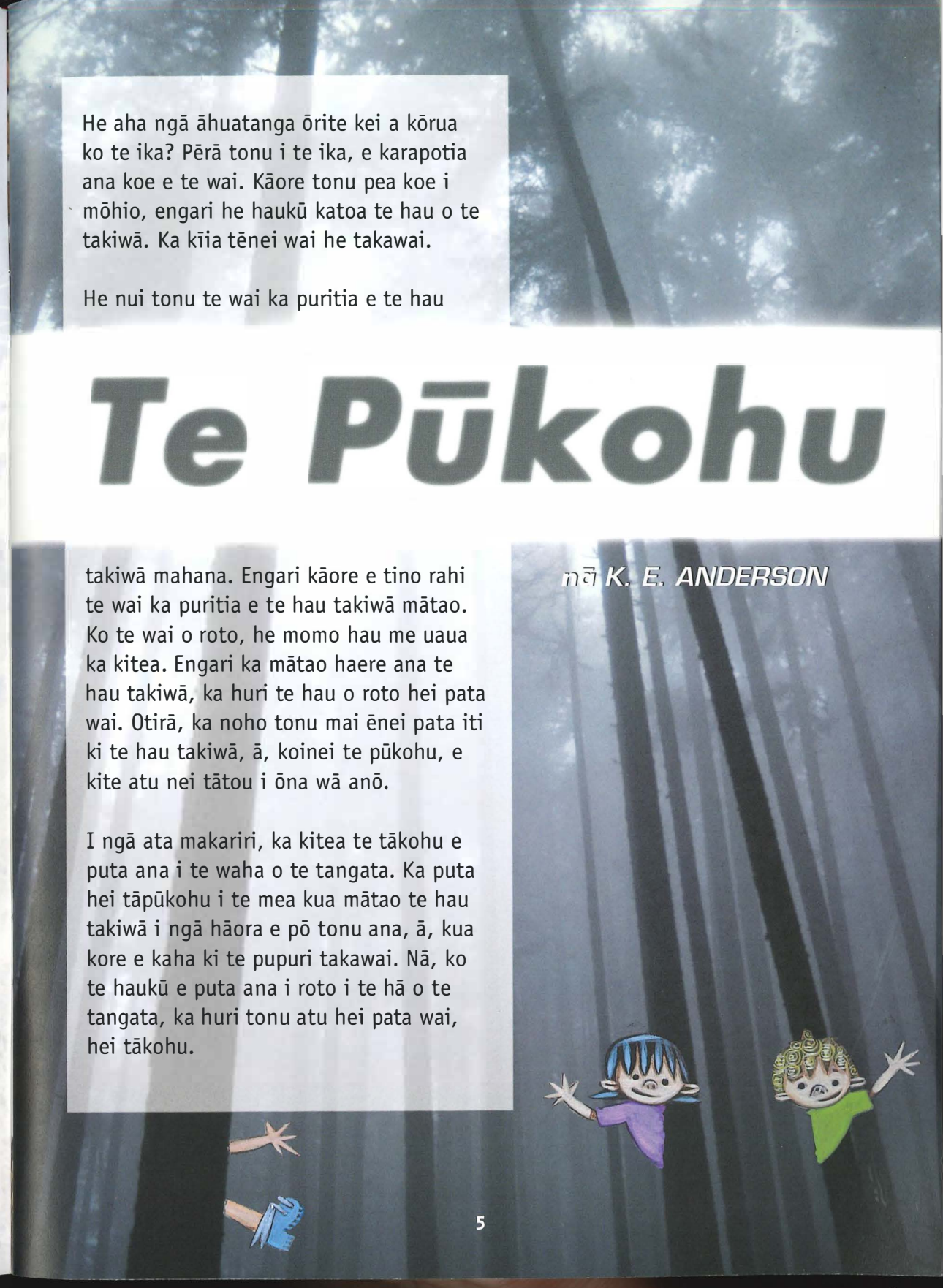






Ki te pūmau tonu te  
waikohu me te makariri, ka  
tipu haere tonu ngā tioata.  
Ki te roa tonu tēnei tūāhua,  
ka tukuna ngā kaimahi hiko ki  
te tango i ngā tioata hukapapa  
mai i ngā waea kawehiko, kia  
kore ai e motu i te kaha  
taumaha.

Nāwai rā, ka riro mā te hau  
pupuhi e kawe haere te waikohu  
ki tua o Tāwauwau, ā, kua whiti  
anō te rā. Anā ia! Kua  
kōwatawata ngā mea katoa. Heoi  
anō, nā te mahana, ka rewa te  
hauhunga. Ka taka mai ngā koi  
kōataata i ngā rākau, ka pā ki  
te whenua me te hoihoi anō.  
Kāore i roa, kua tika anō te  
āhua o te taiao. Kua  
menemene anō ngā tāngata,  
i runga i te mōhio arā tonu  
a Rangi rāua ko Tama-nui-  
te-rā e noho mai ana i  
te kahu o te rangi.



He aha ngā āhuatanga ōrite kei a kōrua  
ko te ika? Pērā tonu i te ika, e karapotia  
ana koe e te wai. Kāore tonu pea koe i  
mōhio, engari he haukū katoa te hau o te  
takiwā. Ka kiia tēnei wai he takawai.

He nui tonu te wai ka puritia e te hau

# Te Pūkohu

mā K. E. ANDERSON

takiwā mahana. Engari kāore e tino rahi  
te wai ka puritia e te hau takiwā mātao.  
Ko te wai o roto, he momo hau me uaua  
ka kitea. Engari ka mātao haere ana te  
hau takiwā, ka huri te hau o roto hei pata  
wai. Otirā, ka noho tonu mai ēnei pata iti  
ki te hau takiwā, ā, koinei te pūkohu, e  
kite atu nei tātou i ōna wā anō.

I ngā ata makariri, ka kitea te tākohu e  
puta ana i te waha o te tangata. Ka puta  
hei tāpūkohu i te mea kua mātao te hau  
takiwā i ngā hāora e pō tonu ana, ā, kua  
kore e kaha ki te pupuri takawai. Nā, ko  
te haukū e puta ana i roto i te hā o te  
tangata, ka huri tonu atu hei pata wai,  
hei tākohu.





# Te Hanga Pūkohu, Kohu-auahi

## Ngā Utauta

- he tio
- he wai wera
- ētahi papa rākau e rua, kei te āhua 6 mitarau te teitei
- he paepae tunu mīti
- he oko hupa
- he ngongo kirihou
- he pepa kirihou

1

Huripokia te paepae tunu, ka whakatakoto atu i ētahi kapunga tio e rua ki runga ake.

Takaia ki te pepa kirihou, kia kore ai te tio e paheno noa. Waiho mō ētahi meneti, kia riro ai mā te tio e whakamātao te hau o raro o te paepae.



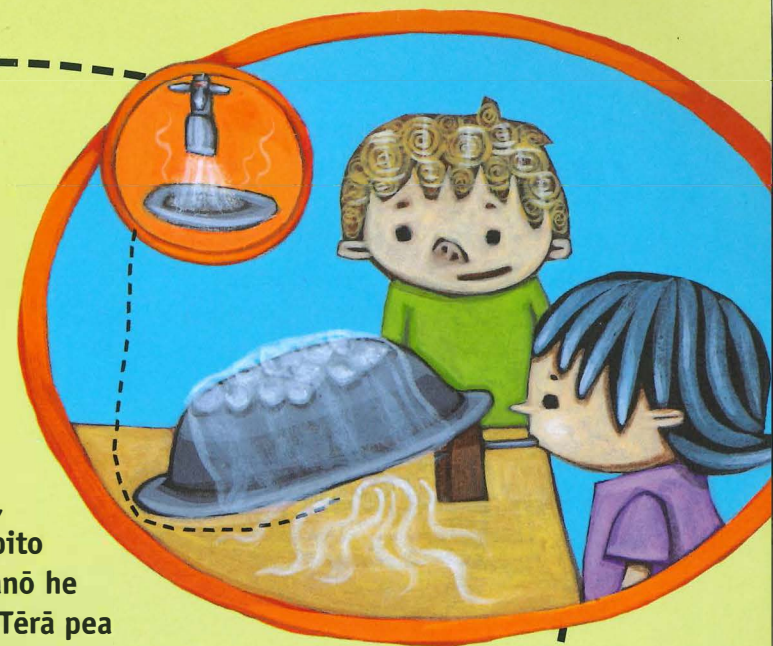
2

Āta hikitia a mua o te paepae tunu, me te whai kia kaua e paheke atu te tio. Kōkūhua atu ngā papa rākau ki raro i ngā koko o mua o te paepae.



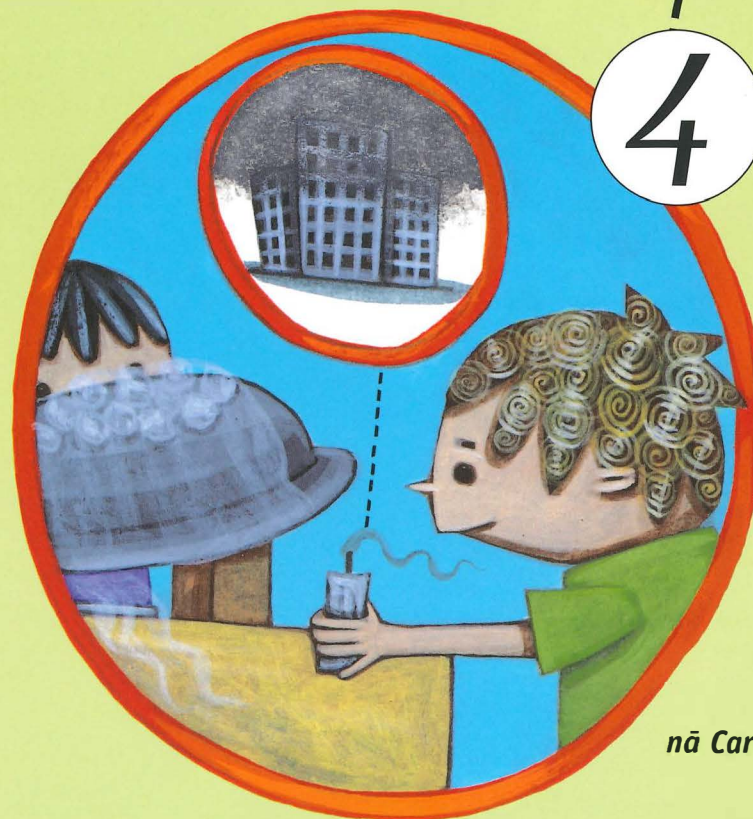
3

Tonoa he pakeke kia whakakī i te oko hupa ki te wai wera, ka āta kuhu atu ki raro i te paepae. Raua atu tētahi pito o te ngongo ki roto i te wai wera, ka tuku i tō hā mā roto i te pito e wātea ana. Kua noho mai anō he tākohu ki raro i te paepae? (Tērā pea ka whaihua te hora i tētahi tītauera ki runga i te paepae kia kapi katoa ai ngā taha - mā konei ka āta puritia te tākohu.)



4

Hei hanga i te kohu-auahi, heoi anō tāu, he tahu i te kānara, ka tinei atu. I te wā e puta tonu ana te paowa, meatia atu ki raro i te paepae. I konei kua minamina auahi te pūkohu. Koinei hoki te āhua ka pā i ētahi o ngā tāone nui o te ao.



nā Carol Herring ngā pikitia



“Kua matakū katoa au! Kua kore au e mōhio ka pēhea, nō reira kei te kimi wāhi noho hou ahau mōku.” Koinei te kōrero a tētahi wahine o Rotorua i te hūnga ake o tētahi “waiariki pupū” i te papa karaihe o mua i tana whare i nā tata nei.

He nui ngā waiariki kei te tiriti i noho rā ia, ā, mō ētahi wiki kua kaha tonu te korikori o ērā. Kāore i roa i mua i te hūnga, kua ngaeki te whenua i te takahanga atu o te tangata tapahi karaihe. Ka taka atu ia ki roto i tētahi rua mawharu. Kāore i whara, engari i tumeke, ā, kāore i whakaae kia hoki anō ki te tapahi i aua karaihe - ko wai hoki te tangata ka whakaae!

# Te Papa Karaihe i Hū

nā Rupert Alchin

Engari ko te hū tino nui, ka tīmata i te Paraire, te 8 o Haratua 1998. I te ahiahi, ka tuhaina ake he paru, he korohū, he waiwera, me te toka. Ka taka ki te Rātapu, kua 12 mita te teitei o te hūnga. Whakamataku ana tēnei ki te hunga noho pātata, heoi anō, muia ana tō rātou kāinga e te hunga tāpoi me te hunga tātai arowhenua. Kāore i āriarika tō rātou manarū.

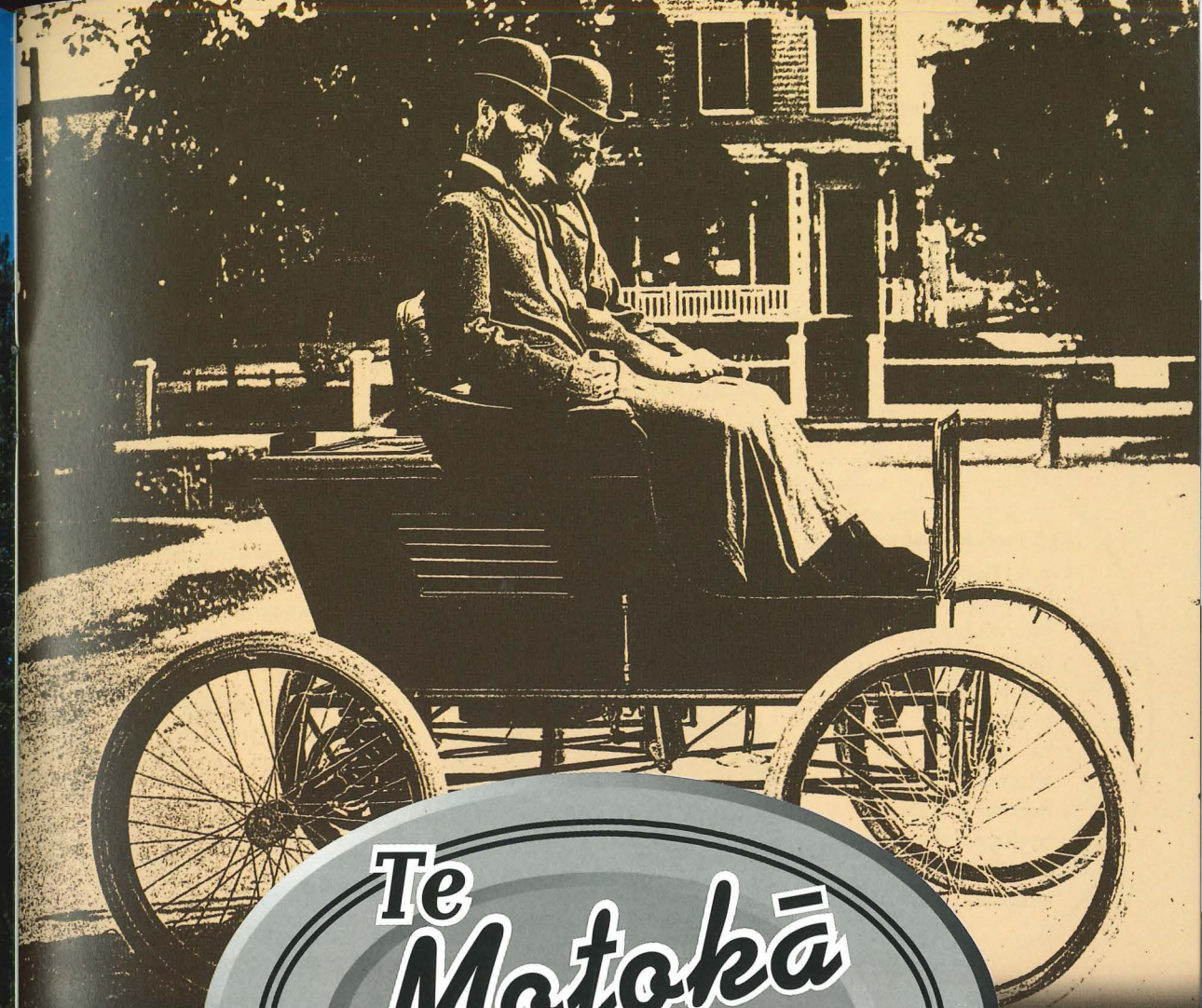
Ko te pōhēhē i te tīmatanga, kua ara ake he waiariki pupū\* hou, engari nō muri mai ka kitea kāore i rerekē ake tēnei waiariki i te nuinga kei taua tiriti. I ngā tau ki muri, kua whakakīia taua waiariki e ētahi tāngata. (Koinei hoki i tuhaina ake ai he kere, he wai, tae atu ki te pātara!) I roto i ngā tau, kua kaha haere ngā pēhitanga o roto i tēnei waiariki kua tanumia, nā wai rā, ka kimi huarahi e puta anō ai te ki ao mārama.



I ēnei rā kua māuruuru te waiariki, i te kore o ngā pēhitanga kino e āta puritia ana e ia; ka koropupū tonu, engari kua kore e hū.

Heoi anō, he tika tonu tā te wahine rīhi whare me te tangata tapahi karaihe kāore rā i hiahia hoki ki taua kāinga. Mai i tērā wā kua whakatauria e te Kaunihera-ā-Rohe o Rotorua kāore e tika ana kia nohoia taua kāinga e te tangata. Taihoa ka turakina te whare, ā, ka honoa atu ki te whenua ki te Papa o Kuirau. He nui ngā ngāwhā kei te Papa o Kuirau, ā, kua noho kē mai hei wāhi toro mā te hunga tāpoi.

*\* Anei tētahi whakaahua o tētahi waiariki pupū tūturu. Ko te waiariki pupū, he momo waiariki he rite tonu tana tuku wai me te korohū ki te takiwā. I Rotorua, whakamahia ai e te iwi kāinga ngā waiariki mauru hei puna waiwera mō rātou, inā te iti o te utu. Tērā anō te whare hanga pūngao o Wairākei, e pātata ana ki Taupō. I reira ka whakamahia te korohū pēpēhi kua puritia i raro i te whenua hei hanga hiko. Kei tua nā ngā kōrero mō te whakamahinga o te korohū i tērā rautau hei whakahaere waka.*



# **Te Motokā Kai Korohū**

*Ka hokia anō a muri?*

*nā Pat Quinn*

I te āhua kotahi rau tau ki muri, tērā tētahi tokorua, he māhanga, ko Francis Edgar Stanley rāua ko Freelan Oscar Stanley ō rāua ingoa. Nō Maine, i te whenua o Amerika, ēnei māhanga. Ka oti i a rāua te whakatau me hanga he motokā, ā, i tapaina taua motokā ko te 'Stanley Steamer'.



Kua hangaia kētia e ētahi atu he motokā kai hiko me te motokā kai penehini. Engari ki tā te tokorua nei, ka pai ake te motokā ka hangaia e rāua i ērā. Tēra pea i āhua pēnei ō rāua whakaaro:

**Ngā motokā hiko**

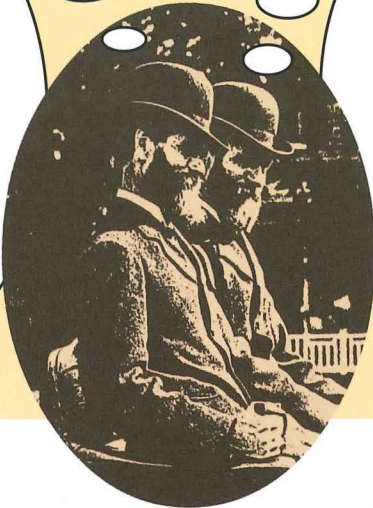
- ka whakamahi pūhiko me rite tonu te whakaora ake
- kāore e tere te haere
- kāore e tuku hau kino ki te taiao

**Ngā motokā kai penehini**

- kai ai i te penehini
- ka tuku hau kino, haunga hoki
- he tino nui ngā wāhanga o te pūkaha
- he uaua ki te whakaharuru, i te mea me kaha tonu te ringa o te tangata ki te huri i te kakau whakakā

**Te Stanley Steamer**

- ka kai i tētahi pūngao māori
- he māmā ki te whakaharuru (mā te māti e haruru ai)
- ka tere tonu te haere
- kāore i tino nui ngā wāhanga nekeneke o te pūkaha
- he iti ngā hau kino ka hua ake



Ka tahuri a Francis rāua ko Freelan ki te hoahoa me te hanga i tō rāua motokā korohū. Ko te motokā i oti mai, he māmā ki te whakaharuru, kāore i paruparu, ā, tekau mā rima noa iho ngā wāhanga nekeneke o te pūkaha.

Hei whakaharuru i te motokā, ka tahuna te kōhue. (Kai ai te kōhue i ngā momo kora maha tonu, pēnei i te karahini me te waro.) Ka wera ana te wai o roto i te kōhue, ka huri hei korohū. Ka kaha tonu te pēpēhi o te korohū, ka huakina e te kaitairaiwa ētahi katirere, kia tukuna ai te korohū ki ōna wāhi anō o te pūkaha. Ānana! Whewheo ana te haere o te Stanley Steamer; kei muri kē ngā motokā penehini e kai ana i ōna puehu!

Nō te tau 1906, ka riro ko te Stanley Steamer te mihini tuatahi i neke atu i te 1.24 kiromita te tawhiti i haerehia i roto i te meneti kotahi. I eke ki te 204 kiromita i te hāora te tere o tana haere.

Kātahi ka hangaia e rāua he motokā korohū whakataetae. I eke tōna tere ki te 240 kiromita. Heoi anō, i te wā e parahutihuti ana te haere, ka rokohanga atu he wāhi torehapehape i te ara, ka kotiti katoa te haere, me te aha, ka pakaru rikiriki te motokā. Ahakoa i whara te kaitairaiwa, he tino waimarie kāore i mate. Ka mutu i konei te whai atu a ngā māhanga i ngā mahi whakataetae. Heoi anō, mōhio tonu rāua he tino motokā tā rāua i hanga ai, ka mutu, he motokā i hiahiatia e te tini tāngata. Nā, he aha i kore ai e hokona whānuitia? Ahakoa i pai ētahi āhuatanga o te taha hokohoko, arā anō ētahi āhuatanga kāore i tino pai. Waihoki, i pērā anō te āhua ki te motokā.





**Te Taha Whakatairanga me te Taha Hokohoko**  
**Ngā Painga**

- Ka taraiwa tahi te tokorua i ō rāua motokā ki te puku o te tāone, ko tētahi kei tōna anō motokā, ko tētahi kei tōna, ā, he 'haere kōtui' te āhua o tā rāua haere. He tau kē ō rāua āhua; e rua, e rua, he whai pāhau roa, ā, he ōrite ō rāua pūweru. Māna te kore e aro atu o te tangata ki te tokorua nei me ō rāua motokā.

**Ngā Raruraru**

- Kāore rāua i whakaae kia tāngia he pānui whakatairanga i te motokā.
- Me utu rawa te kaihoko i te katoa o te moni i te wā i hokona ai te motokā - kāore i whakaaetia he moni tāpui.

**Te Hanga me te Whakatikatika**

**Ngā Painga**

- Mēnā i māuiui te motokā, ka whakahokia tikahia e te kaihoko ki te wheketere.

**Ngā Raruraru**

- Kāore i tino maha ngā motokā i hangaia. I te tau 1907, e 775 ngā motokā i mahia mai. Engari i ērā atu tau, kei waenga i te 100 me te 600 noa iho i oti mai.

**Te Pai o te Haere**

**Ngā Painga**

- Ki te whakatairitea ki ētahi atu motokā o tērā wā, he tere, he mā te Stanley Steamer, ā, he māmā ki te whakaharuru.
- Tekau mā rima noa iho ngā wāhanga nekeneke o te pūkaha. Kai ai te pūkaha i ngā momo kora maha tonu, mai i te karahini ki te waro.
- He taonga anō kei roto hei āta pupuri i te korohū, kia kore ai te pūkaha e pahū.
- Whakamahia ai he muraiti hei tahu i te ahi i roto i te kōhue.

**Ngā Raruraru**

- Me rite tonu te whakakī i te motokā ki te wai.
- Tērā kua tatari te tangata mō te rua tekau mā rima meneti kia eke te nui o te korohū ki tērā i hiahiatia e neke ai te motokā.
- Ko te kupu teka i pānuitia e ētahi atu kaihanga motokā mō te motokā korohū, tērā tonu pea ka pahū te kōhue, me te aha, ka hemo te taraiwa me te hunga pātata.

I āhua taurite ngā painga me ngā raruraru ā, taka rawa ki te wā i kitea ai he mihini hiko hei whakaharuru i ngā motokā whai pūkaha "kā-ā-roto" (pēnei i ngā mea e taraiwatia ana i ēnei rā). Nā konei ka pai noa ake ēnei motokā, i te mea kua kore te tangata e mate ki te huri i te kakau hei whakaharuru i te pūkaha.

Kātahi ka timata a Henry Ford ki te whakamahi rārangi awheawhe hei hanga i ana motokā Ford. He maha ake ngā i hangaia, i hokona e ia i ērā ka taea e ngā māhanga te mahi mai. He iti ake anō hoki te utu, nō reira ka taea tētahi Ford e te tokomaha, engari ko te Stanley Steamer, ka noho hei taonga mā te hunga whairawa anake. Ka heke haere te nui o ngā Motokā Korohū e hokona ana. Ka mea ā, ka whaka mutua tēnei mahi a rāua.

Heoi anō, ina whakaarotia te piki ake o te utu mō te penehini i roto i ngā tau, me te paruparu haere o te hau o te takiwā i ngā haukino e ahu mai ana i ngā motokā kai penehini, tērā pea ka ara ake anō te motokā korohū hei tino waka mō ngā rā kei te tū mai. Engari me pātai anō te pātai, he aha te momo kora ka whakamahia hei whakawera i te wai kia puta ai te korohū?

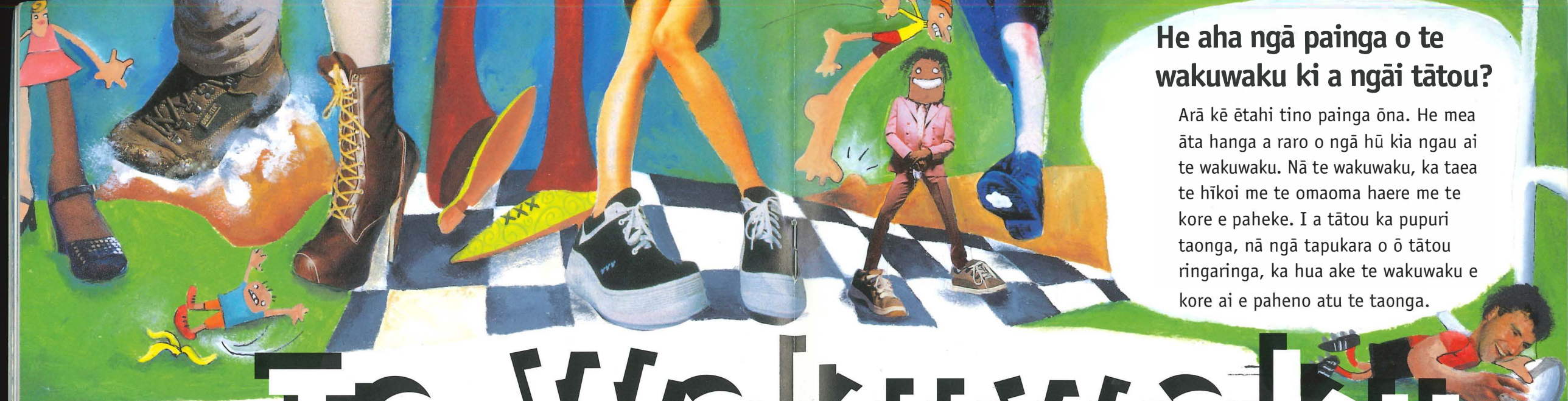


1926 Model-T Ford



1920 Stanley Steamer





## He aha ngā painga o te wakuwaku ki a ngāi tātou?

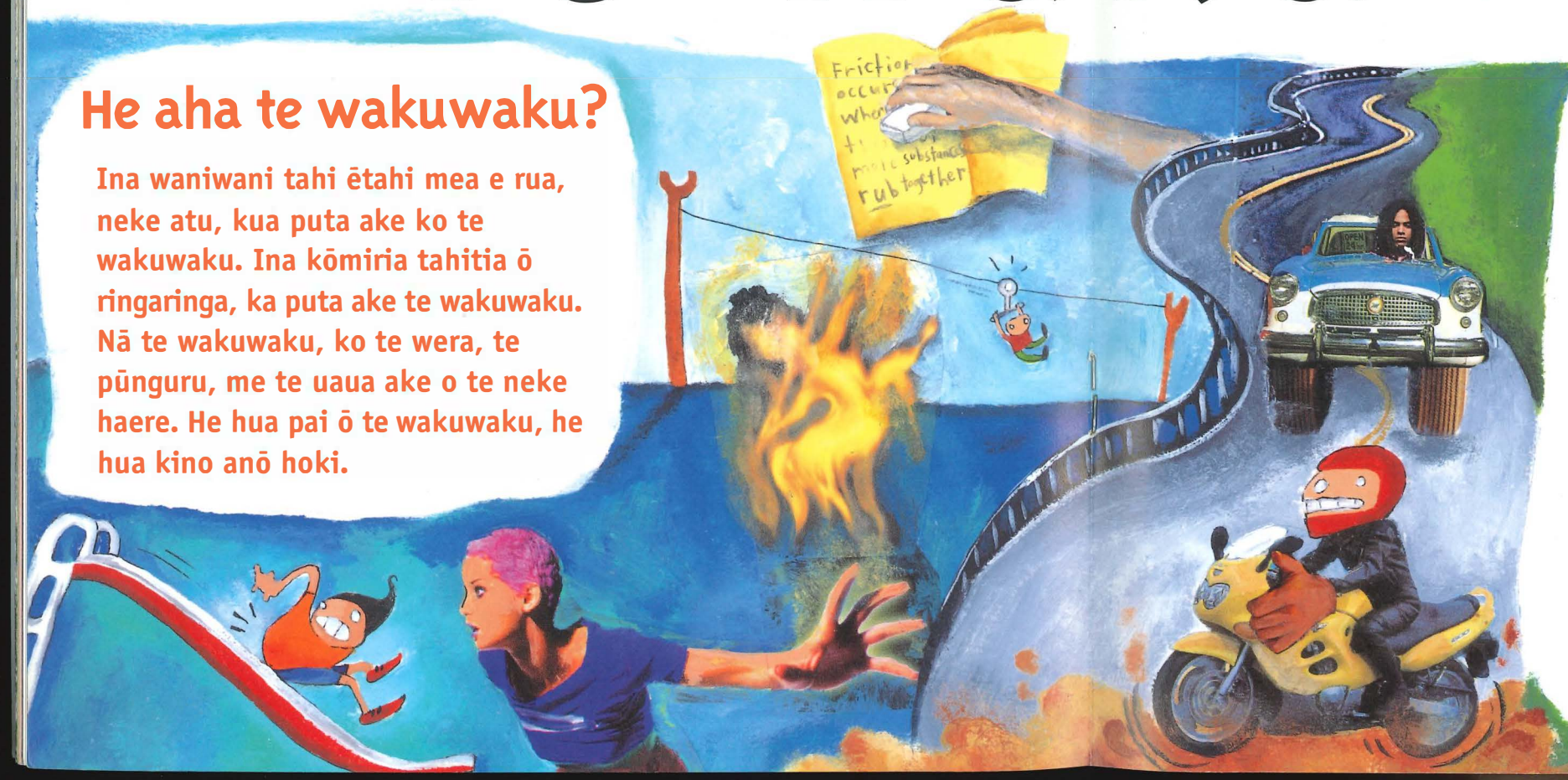
Arā kē ētahi tino painga ōna. He mea āta hanga a raro o ngā hū kia ngau ai te wakuwaku. Nā te wakuwaku, ka taea te hīkoi me te omaoma haere me te kore e paheke. I a tātou ka pupuri taonga, nā ngā tapukara o ō tātou ringaringa, ka hua ake te wakuwaku e kore ai e paheno atu te taonga.

# Te Wakuwaku

nā K. E. Anderson

## He aha te wakuwaku?

Ina waniwani tahi ētahi mea e rua, neke atu, kua puta ake ko te wakuwaku. Ina kōmiria tahitia ō ringaringa, ka puta ake te wakuwaku. Nā te wakuwaku, ko te wera, te pūnguru, me te uaua ake o te neke haere. He hua pai ō te wakuwaku, he hua kino anō hoki.



Nā te wakuwaku anō i kore ai e taka atu aua taonga. Ko te wakuwaku hoki kei te whakahaere i te kiore rorohiko; ko te rango o roto, he pōro tupangarua, raparapa hoki, ā, mā konei ka pīrori te pōro i runga i te papa kiore, te mania noa. He pērā anō te rapa o ngā wīra motokā - ka āta piri atu ki te ara haere kia neke whakamua ai. Ki te kore he wakuwaku, kua tū kau te motokā, ahakoa te hurihuri o ngā wīra, me te mea nei kua mau i te ōi.



## Ngā wā e kore e pai te wakuwaku

He whakararu kē tā te wakuwaku ina hiahia te tangata ki te neke i tētahi mea. Mā te wakuwaku, ka tere pau te hau i te mea me nui ake te whakapau kaha ki te pana, ki te kukume rānei i te mea e nekehia ana. Ka hoatu hoki he hinu ki ngā hū retireti me ngā pahikara hei patu i te wakuwaku, kia tere ake i te haere i runga i te iti o te whakapaunga kaha. Nā te wakuwaku, ko te wera, me te pūnguru hoki o ngā mīhini. Nā te rite tonu o te konikoni tahi o ngā wāhanga o te pūkaha motokā, ka pūnguru haere te maitai. Me kī he pērā anō te āhua ina waikaueretia ngā pona o ngā tarau.



## Me pēhea te whakakore i te wakuwaku?

Kāore e taea te āta whakakore rawa i te wakuwaku, engari ka taea te whakaiti ake. Kōmiria tahitia ō ringaringa kia mahana rawa. Ka mutu tēnā, raua atu ki te wai, me te whakakapi i te hopi. Kātahi ka kōmirimiri anō. Ka roa ake te wā e tatari ana koe kia mahana ō ringaringa? He āhua rite te hopi ki te hinu ka hoatu ki ngā mīhini. Ko tā te hinu, he whakaiti ake i te wakuwaku ina konikoni tahi ētahi mea. Kāore e pērā rawa te wera, ā, kāore e tere pūnguru.

He tikanga anō tā te hunga retireti maunga hei patu i te wakuwaku. Ko tā rātou, he hoatu harare ki raro o ngā reti kia maheni ai. He maheni hoki te hukarere, ā, ina konikoni tahi ētahi papa maheni e rua, kua iti noa ake te wakuwaku, tēnā i te konikoni tahi o ētahi papa tupangarua. Mā te whakamahi harare, kua kaha ake te mania, kua tere ake te rere.

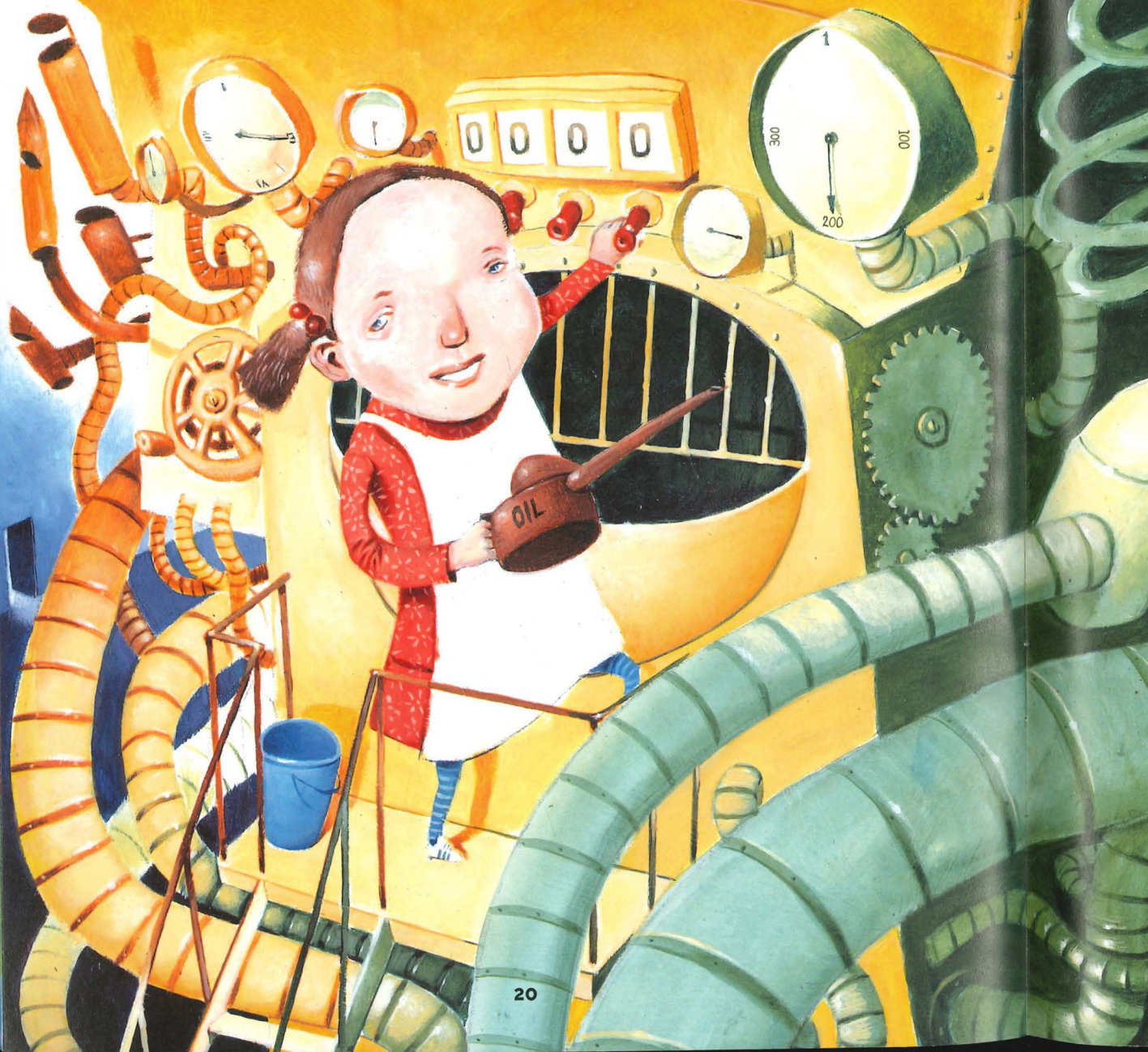
nā Ali Teo ngā pikitia





# Te Mihini Piakamo

nā Vince Wright



E kimi ana te Kamupene Kamu-Kū i tētahi tino tangata hei tiaki i te mihini piakamo hou.

Kua mea ake te kaiwhakahaere, a Māmā Kū, "Kua āhua raru tātou."

Whakaae atu ana a Tametame, "Āe rā. Taihoa pea ka tino raru rawa atu."

Kua kōrero ko Puhi Pūawhe, "He iti mokoroa, e hinga te mihini."

Kātahi rātou ka whakatau kia puta he pānui ki te nūpepa. Aoinaake, tokowhā noa iho te hunga kimi mahi i tae ake ki te wheketere. Titiro kau iho ki te mihini piakamo. Te mahi a te ringaringa, te niho, te aha noa iho, me te haruru anō hoki o te puku i te riri. He taniwha whakamataku te ritenga.

"E kī, he mahi māmā noa iho!" kua amuamu te tangata tuatahi. "Tēnā teka. Kua haere au!"

Kua hāmeme ko te tangata tuarua, "Kei hohoro i aku ngutu, ka mau i taku tinana. Ko au anō tēnā kua haere."

Kua amuamu ko te tangata tuatoru. "Arā noa atu te pai o te noho kumu i te noho mai ki konei hei hoa mō tēnā taniwha. Ko au anō tēnā kua haere."

Ka taki haere. Kotahi noa te tangata i mahue mai, he kōtiro, ko Ruiha Reka te ingoa.

Ka kī ake a Māmā Kū me te rūrū atu anō ki a Ruiha, "Nau mai. E tino whakapono ana au nāu te mahi nei." Mahue atu ana te kōtiro nei ki tāna mahi.

Ka noho mai ko Ruiha rāua ko te mihini piakamo pukuriri.

"Korū! Korū! Korē!" Anō nei e matekai ana te mihini. Ka putua atu e Ruiha ētahi pēke Kīnakinaki e toru ki te waha.

"Patū! Patū! Pakē!" Anōnei e komekome ana te mihini. Ka whakakikīngia e Ruiha ngā wīra i te taha.

"Kekē! Kekē! Kekē!" Anō nei e matewai ana te mihini. Ka hoatu e Ruiha he hinu me te whakakī i te kōpapa o muri ki te wai.

"Wanī! Wanī! Wanea!" Anā ia! Kua koa katoa te mihini.

Taro kau iho, ka pipī mai te piakamo Kū-natinati, ka taka atu ki roto i te pākete i te tou o te mihini. Nā wai, nā wai, ka kī haere te pākete.







I te rima karaka, ka hoki mai a Māmā Kū, ka kī ake, “Ka nui tēnei mō tēnei rā”. E whakariterite ana a Ruiha ki te hoki, ka kīia atu kia raua atu ngā piakamo ki rō kōpaki, ka mutu, kia tekau ki tēnā, ki tēnā kōpaki. Ko ngā toenga, māna ērā hei whakahoki ki te kāinga. He utu tāpiri tēnei hei tohu i tana pukumahi.

I te rā tuatahi, tekau mā whitu anahe ngā piakamo i oti i te mīhini, nō reira kotahi noa iho te kōpaki i kī i a Ruiha. I te rā tuarua, e rua tekau mā rima i oti, i te rā tuatoru, e toru tekau mā iwa i oti. Ko te mahi tuatahi a Ruiha ia rā he whakahoki i te karu tatau o te mīhini ki te kore. Taro kau iho, ka mōhio ia ka taea e ia te tatau e hia ngā kōpaki ka taea te whakakī i tana titiro ki te karu tatau i te paunga o te rā. Me tana mōhio anō e hia ngā piakamo ka toe mai ki a ia hei heri māna ki te kāinga.

Ka tere kē atu, ka tere kē atu te mahi a te mīhini. I tētahi rangi, kotahi rau e rua tekau mā rima ngā piakamo i oti. Ka kīia atu a Ruiha ina kī i a ia ētahi kōpaki tekau, raua atu ki tētahi pouaka.

Atu i taua rā, e hia rau kē ngā piakamo i oti i te pūrere te mahi ia rā, ia rā. Nā wai, nā wai, ka mōhio a Ruiha e hia katoa ngā pouaka me ngā kōpaki ka oti i tana titiro noa iho ki te karu tatau. Me tana mōhio anō e hia katoa ngā piakamo ka toe mai ki a ia hei whakahoki māna ki te kāinga.

Kua pātai a Mama Kū, “He aha rā ia i mōhio ai?”

Kua kī ake ko Tametame, “Aua hoki.”

Kua kōrero ko Puhi Pūawhe, “Kāore e aro i a au.”

Ka pēhea koe ... e aro ana anō i a koe?





# Te Purapura Nui Rawa Atu

nā Jill MacGregor

I tērā wiki, i mauria mai e te kaiako tētahi mea rerekē ki te kura. I riro i a ia tēnei taonga i a ia e noho ana i tētahi o ngā moutere o Te Moana nui a Kiwa. He rahi tonu, he parauri te tae, ā, he mārō. Engari kāore noa iho i tino taumaha. Ka kōruiruitia ana, me te mea nei he momo wai kei roto e pōhutu ana. Ka riro mā mātou e whiriwhiri he aha taua mea.

“He rite te āhua ki te hutupōro i hangā ki te rākau,” te kī ake a Jamie.

Kua kōrero ake ko Emma, “E whakapae ana au he nati tino rahi.”

Ko whai kupu ko Joshua, “Āe, koinā. He ‘niu’. I kite au i ētahi i a au i Whītī. Nō te ngahorotanga o ngā niu mai i te rākau niu, ka kohia e taku hoa. Ka waruwarua ngā kai o roto, kātahi ka kōpētia kia oti mai he ‘kirīmi’. Whakamahia ai tēnei kīnaki i roto ngā kai i tunua e tana māmā.”

I mua atu kua kite mātou i ētahi niu paku ake i te hokomanga, ka mutu, he huruhuru katoa. Engari he rerekē tēnei. Kei waho mai o te anga, ko tētahi peha tino mātotoru. I hiahia tō mātou rōpū ki te roanga atu o ngā kōrero mō tēnei purapura tino nui me ngā kai o roto. Ko mātou anō i hiahia ki te mahi mai i te kīnaki niu.

Hei mahi i te kirīmi, me mahi mai he taonga waruwaru. Ka homai e te kaitiaki kura ētahi papa, ā, ka tīkina atu he hama me te whao i te rūma hangarau.

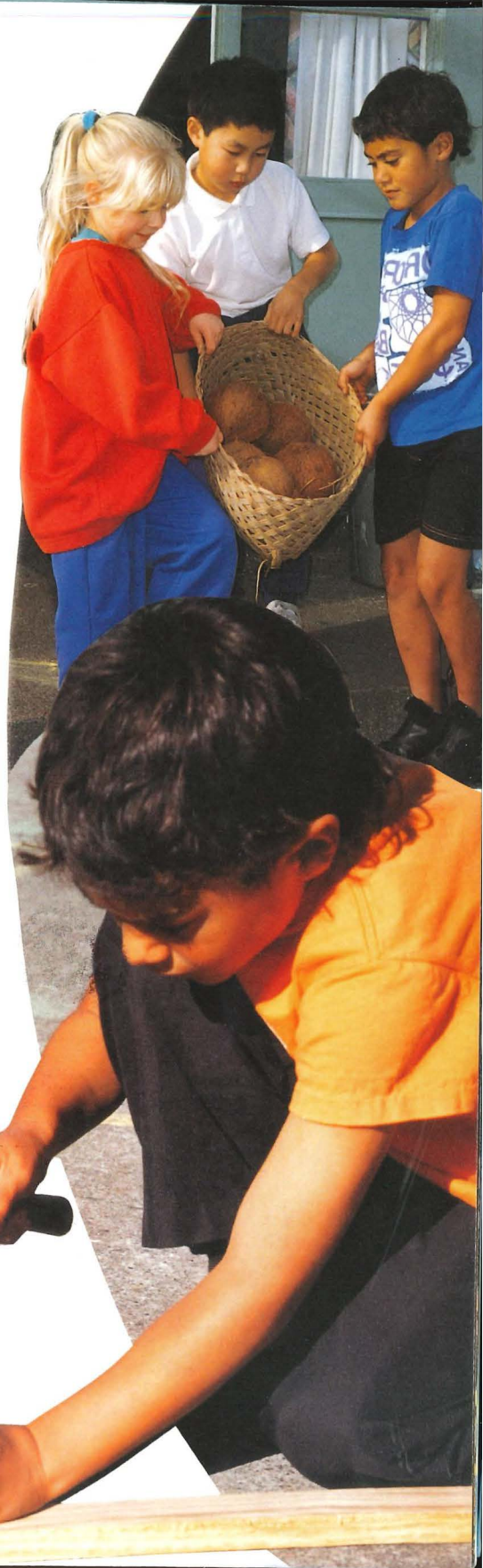
Ka haria mai i te kāinga ngā poki maitai o ētahi pātara, me ētahi pēke kirihou, he pēke matakupenga hei kōpē mai i te wē o te niu. Ko ngā niu, he mea hoko i te hokomanga.

I te ahiahi paihurarere tuatahi o muri mai, ka haria ā mātou taputapu katoa ki waho. I mua i te wāwāhanga o ngā niu, ka whakawhiti kōrero mātou mō te hanga i ngā taonga waruwaru.

Ko tā Georgia, “Ki a au nei kia whā ngā poki pātara mō ia taonga waruwaru - e rua ki tētahi taha, e rua atu anō ki runga. Ka pai tonu ngā tapa whai niho o ngā poki pātara hei karure i te kiko o te niu.”

Ka kitea e Jordan he māmā ake mehemea ka whakamahia he whao nui ake hei poka i te poki pātara, kātahi ka naomia atu he whao iti ake hei whakamau atu i te poki ki te papa. I reira mātou e hamahama ana mō te hia te roa. I ētahi wā ka tono āwhina mātou i ētahi atu, kia kore ai ngā papa e neke. Kōtuke tonu atu ētahi o ngā whao, me te aha, kāore i tino

tika te takoto mai o ngā poki. Heoi anō, ko te mea nei, i mau pūmau ki ngā papa.







I uaua tonu te wāwāhi i ngā niu. Ko tā Emma, he pao atu i tāna ki ngā tepe; kotahi noa te hua o tērā, ko te mamae o te ringa. Ka whakataka atu a Krysta i tāna ki te papa raima, engari ka turapa, me te pirori haere atu. Ko tā Jamie, he paopao i tāna ki te toko maitai, he aha te aha!

Ka tahuri a Ken ki te whiu atu i tāna ki te pakitara, me te aha, ka pakaru rikiriki. Ko mātou katoa tēnā ki te kohikohi haere i ngā maramara. Te reka kē o ngā kiko, engari kua mōmōu noa te wai o roto.

Kua hāmama te waha o Catherine, “Kātahi nā te mōmōu! Kei te hiahia whakamātau au i te waireka o roto. Me pēhea e taea ai te wai o roto me te kore e pakaru o te anga?”

He whakaaro tō Krysta. “Me wero atu ki te whao.” E toru ngā ‘pūkanohi o te niu. Ko tētahi o ēnei mārūa iti, he ngohe, ā, ka uru noa atu te whao ki roto. Heoi anō, me whakamātau haere ngā pūkanohi e toru, kia kitea rawatia te mea ngohe. I waimarie a Krysta - i te whatu tuatahi ka whakamātauria, kuhu tonu atu te whao. Ka tahuri mātou katoa ki te whai i tana tauira. Ka hikina e Georgia tana niu, kia pai ai te inu, engari ka māturuturu noa mai te wai o roto. Ka whakaaro ake ia me mahi mai anō he kōhao ki tētahi atu pūkanohi. Ana ka pērā. I te kaha rere o te wai, ka maringi atu ki tana tī-hāte i a ia e inu ana.

Nō te unuhanga o te wai o roto, ka māmā ake te wāwāhi i te anga. I kaikā katoa mātou kia kite mehemea he whaitake tonu ā mātou taputapu hou. Kia kore ai ngā taonga waruwaru e ngāruerue noa, ka whakatakotoria ki tētahi tūru roa, kātahi ka noho atu mātou ki runga; ko te pito whai niho, e anga whakawaho ana.



Ka tīmata te waruwaru, me te huri anō i ngā wāhanga o te anga. Ka taka atu ngā kiko ki tētahi kumete.

Kua huri ināianei ki te mahi i te kīnaki. Ka horoia ō mātou ringaringa, ā, ka ringihia atu tētahi hāwhe kapu o te wai māori ki te kiko kua waruwarua, arā, ki te ‘puru’. Kātahi ka whaoria atu te puru ki roto i ngā pēke matakupenga. Tata tonu ka pakaru ō mātou hamuti ki te kōwiri, ki te kōpēpē i ngā pēke. Ka papī mai te wē ki roto i te kumete.

Hei mahi i tētahi kīnaki tino reka, ka āta whakaweratia kia kotahi te kapu huka parauri i roto i te kōhua, ka waiho kia kukū tonu. Nā Jordan i āta riringi atu te wai o te niu ki roto i te huka, nā Catherine i kōrorirori. Taihoa ka koropupū, me te kaha ake o te kukū, ana, kua reri. Ka ringihia atu ki runga i ngā panana kua kotikotia, kātahi ka kainga. Te reka kē!

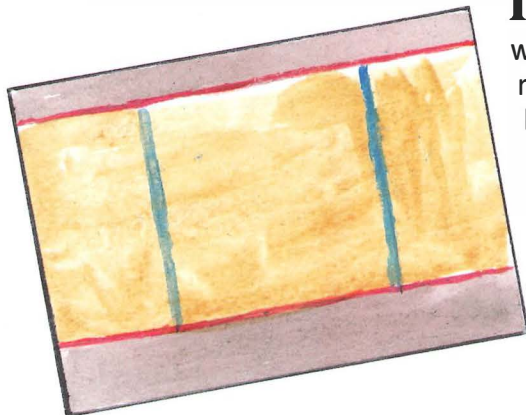




# Ngā Tauira Siapo o Hāmoa

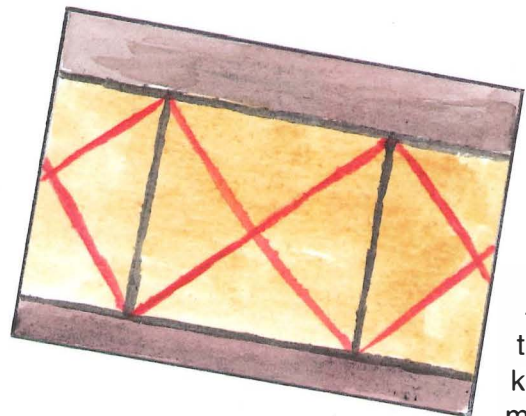
nā Cathrine West

**Ko tā tēnei tauira siapo e tohu ana, ko te manu rere me ngā tapuwae o te manu i te onepū.**



**1.** Tikina he pene rākau me tētahi whārangi pepa, ka tuhi i ētahi rārangi whakarara e rua ki runga. Kia 18 mitarau te roa o ngā rārangi nei, kia 3 mitarau te tawhiti o tētahi i tētahi (ngā rārangi whero).

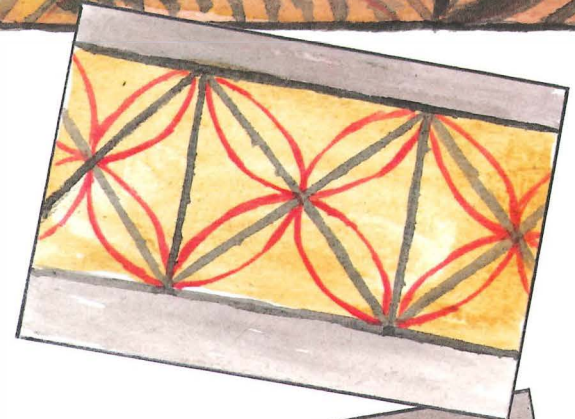
**2.** Ia 3 mitarau, me tuhi atu he rārangi hāngai (ngā rārangi kikorangi) hei tūhono i ēnei rārangi. E ono ngā tapawhā rite ka mahia mai, e 3 mitarau te roa o ngā tapa.



**3.** Tuhia he rārangi hōkai hei tūhono i ngā kokonga tauaro o ia tapawhā.

**4.** Pūruatia ēnei rārangi katoa ki te pene wairere. (Kia maumahara, ka ukuparatia te wai o te pene ka mākū ana. Me āta tuhi, ka tatari ai kia maroke te wai.)

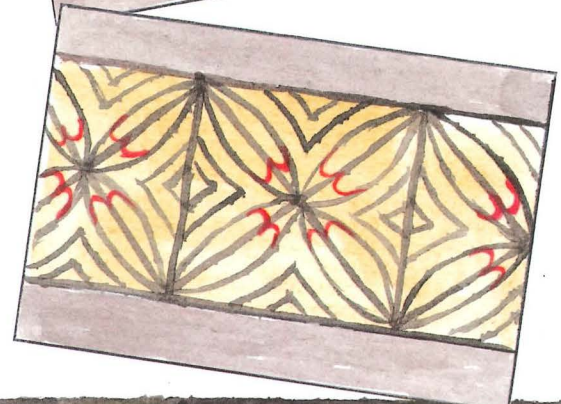
**5.** Kei roto i ia pouaka, tuhia ētahi rārangi pewa ki ngā taha e rua o tēnā, o tēnā rārangi hōkai, kia rite ai ki ērā kei roto i te whakaahua. (Ka āhua rite ki ngā parirau e whā.)



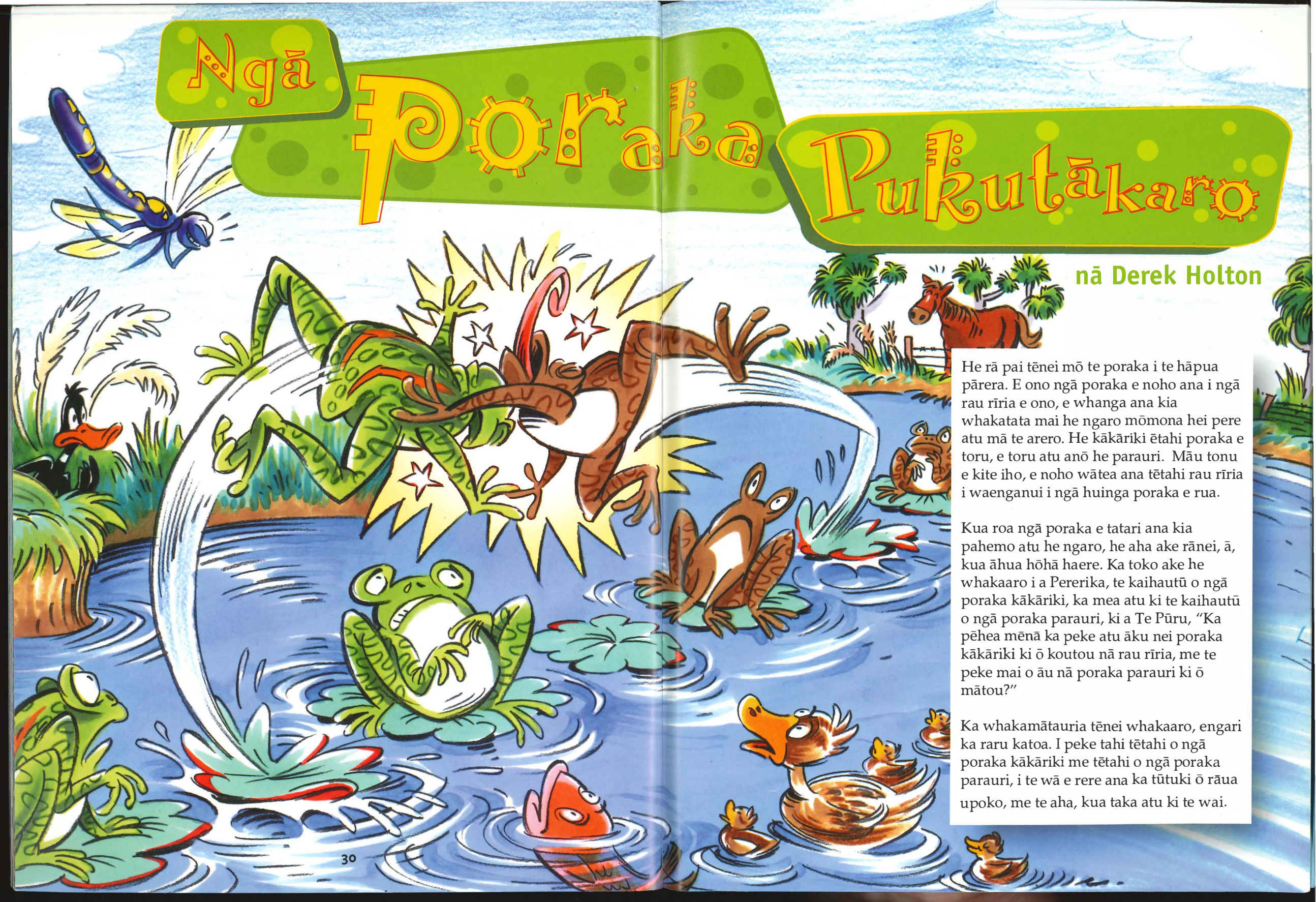
**6.** Tuhia he 'V' āhua rahi tonu ki waenganui i ia 'parirau'. Ko ēnei 'V' e tohu ana i ngā tapuwae o te manu i runga i te onepū. Kātahi ka hoatu ētahi 'v' paku ake ki roto i ngā 'V' rahi.



**7.** Hei whakaoti i te tauira, tuhia tētahi pewa iti ki roto i ia parirau. Kia pātata tonu ki te pokapū o ia tapawhā (tirohia te whakaahua).







Ngā

Poraka

Pukutākaro

nā Derek Holton

He rā pai tēnei mō te poraka i te hāpua pāpera. E ono ngā poraka e noho ana i ngā rau riria e ono, e whanga ana kia whakatata mai he ngaro mōmona hei pere atu mā te arero. He kākārīki ētahi poraka e toru, e toru atu anō he parauri. Māu tonu e kite iho, e noho wātea ana tētahi rau riria i waenganui i ngā huinga poraka e rua.

Kua roa ngā poraka e tatari ana kia pahemo atu he ngaro, he aha ake rānei, ā, kua āhua hōhā haere. Ka toko ake he whakaaro i a Pererika, te kaihautū o ngā poraka kākārīki, ka mea atu ki te kaihautū o ngā poraka parauri, ki a Te Pūru, “Ka pēhea mēnā ka peke atu āku nei poraka kākārīki ki ō koutou nā rau riria, me te peke mai o āu nā poraka parauri ki ō mātou?”

Ka whakamātauria tēnei whakaaro, engari ka raru katoa. I peke tahi tētahi o ngā poraka kākārīki me tētahi o ngā poraka parauri, i te wā e rere ana ka tūtuki ō rāua upoko, me te aha, kua taka atu ki te wai.



Kua tīwaha atu ko Te Pūru, "Taihoa! Taihoa! Kia tūpato anō tātou, kei hemo noa iho tētahi mō te peke noa iho te take. Me whakatakoto kē he ture."

Kua kōrero anō ko Pererika, "Ā kāti. Ki a au nei, kia kotahi anake te poraka ka rere i te wā kotahi."

"Āe rā!" Ko ngā poraka ēnei i tata pakaru rā ngā upoko.

Kua kī ake tētahi o ngā poraka parauri, "Ka pēhea mēnā ka whakatauria me wātea rawa te rau e peke atu ai he poraka ki reira?"

Kua whai kupu ko Te Pūru, "Āe, he whakaaro pai tēnā. Engari ka taea anō hoki te peke ki tua o tētahi atu poraka kotahi."

Nā, kua takoto mai ngā ture a ngā poraka mō ngā momo peke e rua ka taea: ko te peke tika atu ki tētahi rau riria wātea, me te peke ki tua o tētahi atu poraka kotahi ka tau ki te rau riria wātea. Ki tō mōhio, ka tutuki pai anō i ngā poraka te whakawhiti tūranga?



## Kupu Taka

### h

harare wax  
hau gas  
hau (o te) takiwā air, fresh air  
hau (pupuhi) wind  
hauhunga frost  
hukatū hoar frost

### k

kā-ā-roto internal combustion  
kapunga handful  
karure scrape out  
katirere throttle  
kōhue boiler  
koi kōataata glassy spike  
kōmiri rub hands together  
konikoni tahi move together, rub together  
kōpaki packet  
kōpapa storage (tank)  
kōpē squeeze  
kora fuel  
kōrekoreko white, dazzling  
korohū steam  
kota scraper  
kōtuke bent  
kū/kukū thick, gooey

### m

'māna te kore e ...'  
'it was almost impossible not to ...'  
mārua dent  
matakupenga netting  
mawharu muddy  
minamia-auahi discoloured/affected by smoke  
moni tāpuui deposit, downpayment  
muraii pilot light

### n

nao lay hold of  
niu coconut  
ngaeki give way (ground)  
ngāruerue move about  
ngau take effect

### o

ōi mud, slush

### p

paheno slip off, escape  
panoni transformation  
papi ooze  
peha husk  
pere throw, dart forth  
piakamo bubblegum  
pipi ooze  
poi huruhuru pom-pom  
pōhutu make a splashing noise  
poki bottle-top  
pūkoku mist  
pūnguru worn away, worn down  
puru pulp  
pūrua go over, do a second time

### r

rārangi awheawhe assembly line  
rau riria lily pad

### t

takawai humidity  
tākoku mist, vapour  
tapukara fingerprint  
tauraki dry by exposure to the sun  
tepe step  
torehapehape rough, uneven  
tupangaru rough, not smooth  
turapa bounce

### u

ukupara smudge

### w

waiariki hot water spring  
waikauere old, worn out  
waikoku fog  
wakuwaku friction  
waniwani tahi rub together  
waruwaru pare, scrape out  
wē liquid  
whao nail





Ko Tūhono, he rārangi  
kōrero, he mea tātai i te  
o te pāngarau, o te  
pūtaiao me te hangarau  
i te horopaki o te ao o  
ngā ākonga.

He tīmatanga noa iho ēnei tuhituhinga  
hei wero i te hinengaro o ngā ākonga  
ki te whakahaere whakaaro e pā ana  
ki ētahi atu hōparatanga.

Ko te tikanga o ngā ngohe, he  
whakaohe ake i te harakoa o ngā  
akoranga pūtaiao, pāngarau me te  
hangarau.

I hangaia a Tūhono Toru mō ngā  
ākonga e mahi ana i ngā taumata 2  
ki 4 o te Marautanga o Aotearoa.



TE TĀHUHU O TE MĀTAURANGA  
Ministry of Education

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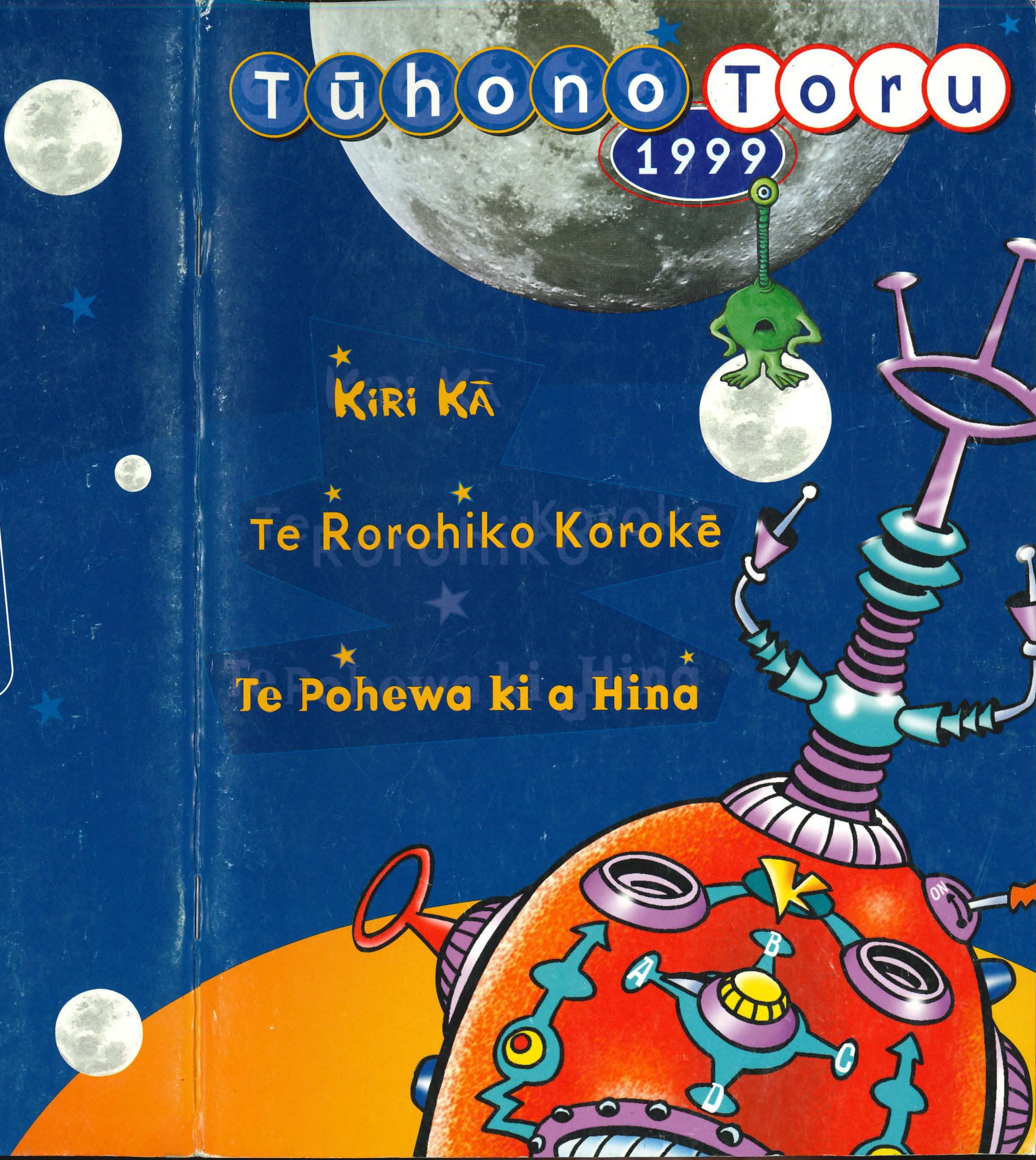
# Tūhono Toru

1999

KIRI KĀ

Te Rorohiko Korokē

Te Pohewa ki a Hina





# Ngā Ihirangi



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I whakaputaina tēnei pukapuka i te tau 1999  
mō Te Tāhuhu o te Mātauranga  
e Te Pou Taki Kōrero Whāiti, Pouaka 3293,  
Te Whanganui a Tara

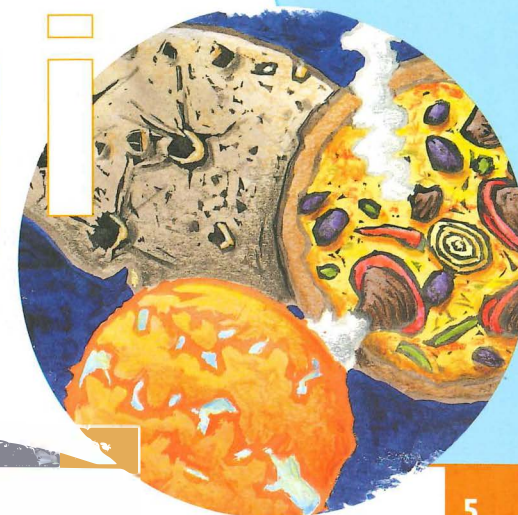
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# Tūhono Toru

1999



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HUARAHI MAORI  
Auckland College of Education



# Ka Hangaia e Hare Hakune He Mahere Whenua

Kia ora! Ko Hare Hakune taku ingoa. Kia whakaatu atu au i pēhea taku whakamahi ine ā-tapatoru hei hanga mahere o te papa tākaro o te kura.

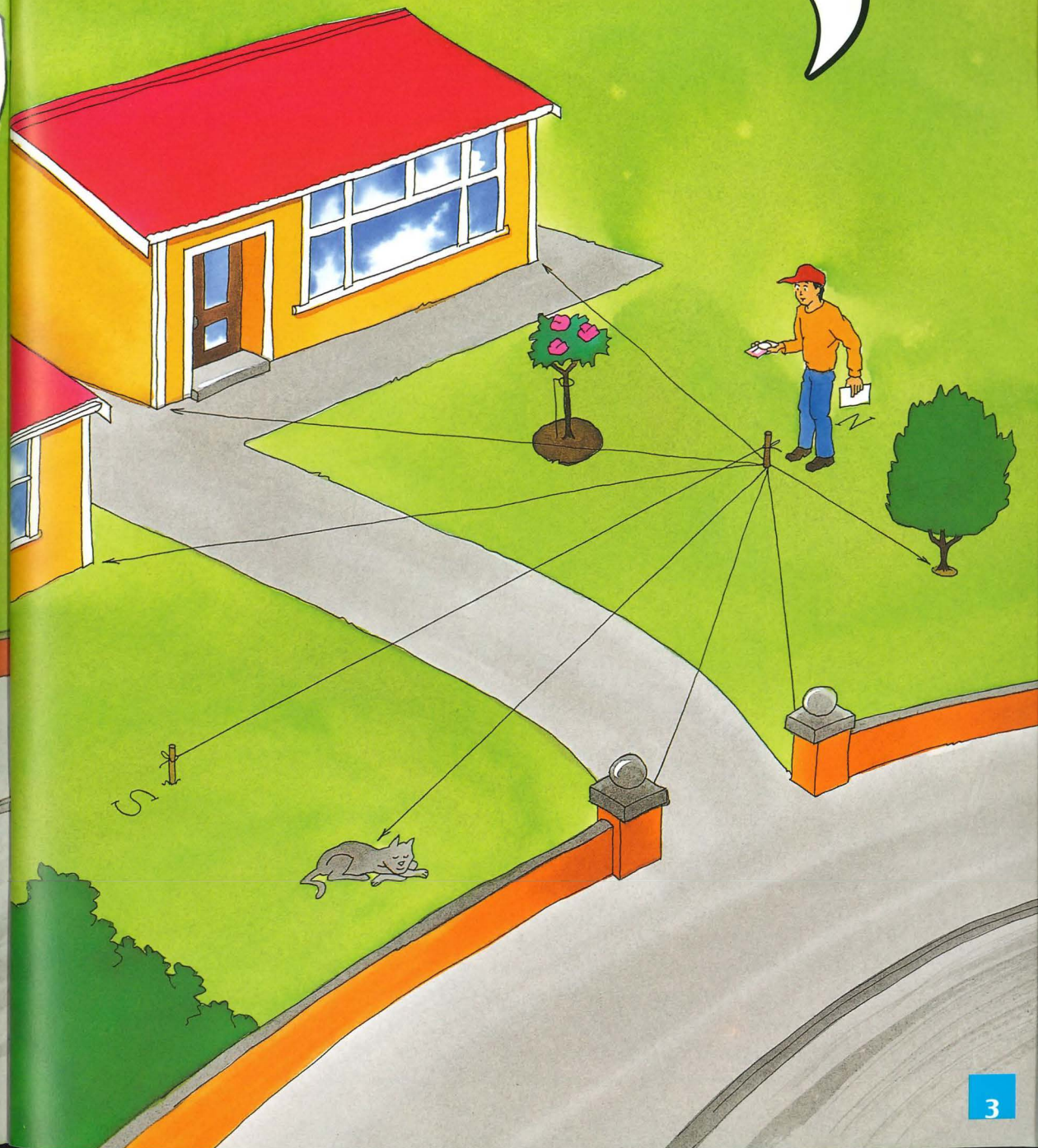


nā Bob Kerr



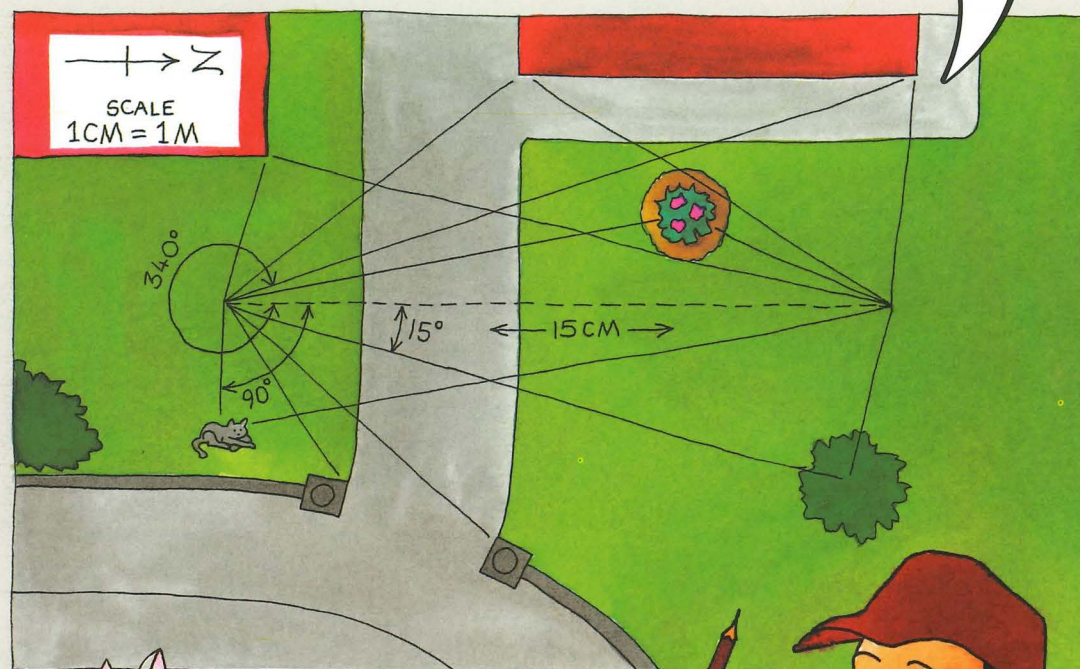
Tuātāhi, kā ineā e āu tētāhi rārāngi 15 mitā te roā e whākāwhiti ānā i te pāpā tākaro, me te tohu i tēnei rārāngi ki te tuāinā. Kā āhu ātu tēnei rārāngi i te rāki ki te tongā. Kā tū āu i te pito ki te tongā, kā whākāmāhi kāpehu hei ine i ngā wāhi noho o tēnā meā, o tēnā meā. Hei tāuirā, ko te rākāu, e tū ānā i te 15 putu, ko te ngeru o te kurā e moe ānā i te 90 putu (ārā, kei te rāwhiti pū tērā), ā, ko te koko whākāterāki o te whārekurā, kei te 340 putu.

Mai i te pito tonga, ka oti i a au te ine te koki o ngā mea katoa i hiahia rā au kia noho mai ki te mahere, ka haere au ki te pito raki, ā, ka pērā anō te mahi. Ka tuhia te katoa o ngā wāhi noho o ngā mea ki taku pukapuka hanga mahere whenua.





Kātahi au ka noho ki te tuhi i taku mahere whenua. Ka tuhia tētahi rārangi 15 mitarau te roa ki te pepa. Ka whakamahia te inekoki hei tuhi i ngā koki i inea e au ki te kāpehu. Ko te pūtahitanga o ngā rārangi i tuhia hei whakaatu i te wāhi noho o te rākau, koirā te wāhi tika hei tuhi i te rākau. Ka oti i a au te whakatau ngā wāhi noho katoa o ngā mea katoa, kātahi ka āta tuhia atu te whare, te ara hiko, te rākau, te rōhi, te ngeru, me te taiepa o mua. I te mea kua āta inea e au te tawhiti me ngā koki o ngā mea katoa, i mōhio tonu au ka tika te wāhi noho o tēnā, o tēnā i tuhia ki runga i te mahere.



Ā kāti, māu anō e hanga tētahi mahere whenua. Kaua e wareware ki te tohu atu kei hea ake te raki. Kaua rānei e wareware ki te hoatu i te taurahi i whāia. Ko te taurahi o tāku nei mahere whenua, ko te 1 mitarau ki te 1 mita, arā ko te 1:100.

# Te Karu

nā K. E. Anderson

Ko ō karu ngā mihini tango whakaahua o tō tinana. Ka kohia e rāua te mārama, me te hopu anō i ngā tauira ka puta ake.

Ko tā ngā io kei tua o ngā karu, he whakanahanaha, he huri i ngā tauira hei momo tohu, ka tuku atu i ngā tohu nei ki ngā roro. Ko tā ngā roro, he tātari i ngā tohu, ka āta ahuahu i tētahi whakaahua o te ao e kite ana koe.



Uaua kukume i te karu

Tiwha

Whatupango

Kirimōwaho

Wēkamo

Arotahi

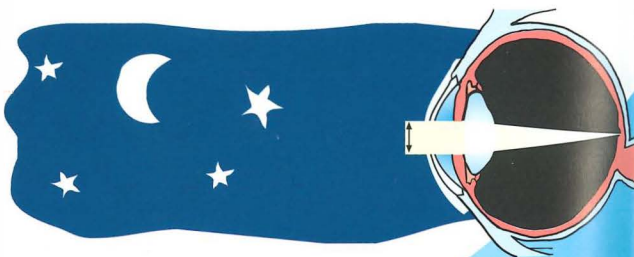
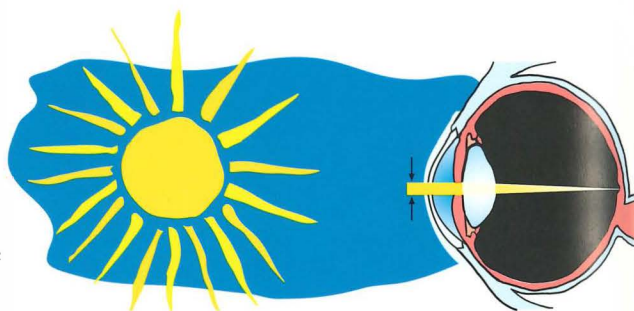
Tuaroa

Mārua

Io whatu

Ina rere atu te mārama ki te tuaroa o te karu, ka whiti atu mā te kirimōwaho (he kiri kōataata tēnei kei mua o te karu). Ka whiti atu te mārama mā tētahi whaitua e kī ana i te wē, ka pā atu ki te tiwha me te whatupango. Ko te tiwha, he kōpae whaikano, ko te whatupango, ko te pokapū pango o te tiwha. (Ko te tae o te tiwha o te nuinga, he parauri, he kahurangi, he kākāriki. Kei ngā ira tangata ngā tohutohu e whakatauria ai te tae.)

He kōhao kē te whatupango. Ka riro mā te tiwha e whakatau te rahi o te whatupango, ā, mā konei ka whakatauria te rahi o te mārama ka uru atu ki roto i te karu. Mehemea he aho kē ka tae ki te karu, ka kopi haere te tiwha, me te aha, kua iti ake te whatupango. Ko tā tēnei, he tiaki i te tuaroa kei muri o te karu. Ki te kore e kaha te mārama, ka tuwhera te tiwha kia rahi ake ai te mārama ka tomo atu, me te aha, kua nui ake ko te whatupango.



Kei kō tata atu i te tiwha, ko te arotahi. Ko tāna, he whakarerekē i te ahunga o te mārama e kuhu mai ana, kia arotahi atu ai ki te tuaroa.

Huri katoa i te arotahi, ko ētahi uaua kukume. Nā ngā kukume a ngā uaua, ka rerekē te āhua o te arotahi. Ko te āhua o te arotahi, kei te āhua tonu o te pātata, te tawhiti rānei o te mea e āta tirohia atu ana. Mō te nuinga o ngā tāngata mau mōwhiti i te mea kua hē te mahi a ngā karu, kei te arotahi te mate. He ānau te āhua o te tuaroa, ā, ko tā tēnei, he whakangangahu i te kāhua o te mea e kitea atu ana.



Kī ana a roto o te karu (arā, a waenga o te arotahi me te tuaroa) i tētahi wē piapia nei. Koinei i āhua porohita ai te karu.

Ka kīia tēnei wē he 'pono ā-karu'.

Arā, ka taea te whakawhiti mārama me te kore te kotiti, te kore rānei e marara. Ko te tuaroa, me kī ko te 'kiriata' o te karu. Ko tāna, he hopu i ngā kāhua ngangahu o ngā mea e kite ana te tangata. E taea ai tēnei, ka whakamahia ōna pūtau kite mārama e hia miriona nei. Ko ētahi o ēnei pūtau ka kīia he toko, ko ētahi ka kīia he koeko. Ko tā ngā toko, he tātari pēhea rawa te ahoaho, te pōuriuri rānei. Ko tā ngā koeko, he hopu i te tae. Ki te titiro koe ki tētahi whakaahua he pango, he mā anake ngā tae, kua āhua mōhio koe he aha ngā 'kōrero' e hopukina ana e ngā toko, arā, ko te ahoaho, ko te pōuriuri me waenganui, engari kāore ngā tae.

E toru ngā momo pūtau koeko ka hopu tae. Ko tētahi ka aro atu ki te whero anake, ko tētahi ki te kahurangi, ko tētahi anō ki te kōwhai, kia kapi katoa ai ngā tae mātāmua. Arā, nē, ko te tini o ngā tae e kite ana tātou, i takea mai i te kōmititanga o ēnei tae mātāmua e toru. Hei tauira, ko te kākāriki te kōmititanga o te mārama kahurangi me te mārama kōwhai. Ka kite ana te karu i te kākāriki, kua ara ake ngā koeko kahurangi me ngā koeko kōwhai, me te tuku karere hiko mā te io whatu ki ngā roro. Ko ngā pūtau koeko nei e aro ana ki te tae, e noho tōpū mai ana ki tētahi tapore kei waenganui pū i te tuaroa. Ka kīia tēnei wāhi ko te mārua. E rua mitamano noa iho te whānui o te mārua nei. Arā noa atu ngā wāhi o te tuaroa kei reira ngā toko e noho mai ana.



# Ngā Roro

pokapū  
ataata

io whatu

Te Karu



Ko tā ngā toko me ngā koeko e hia miriona nei, he tuku karere hiko mā te io whatu ki ngā roro. Ka āta tātarihia e ngā roro ngā karere tini ngerongeroro, me te hanga kāhua tōtika nei o tā te karu i kite ai. Hei tauira, ko te kāhua ka tae ki te tuaroa, he kāhua hurirapa, ā, ko te whakatika i tēnei tūāhua tētahi o ngā mahi huhua ka whakatutukihia e ngā roro. Ina hangaia e ngā roro tētahi kāhua whai tikanga mai i ngā tauira marama i pā ki te karu, i ōna wā anō ka whāia kētia ko te mea e whakapaetia ana he tika, he pono. Arā, ka riro mā ngā roro e whakarerekē te kāhua o te ao e kite ana ngā karu. I te nuinga o te wā, ka tika anō tā ngā roro i whakapae ai. Engari i ōna wā ruarua nei ka hē. Ka kiia tēnei ko te 'pohewa ā-whatu'. Kei te kōrero e whai ake nei tētahi tauira o tēnei āhuatanga.

# Te Pohewa ki a Hina

nā Bill Keir

HE RAHI AKE TE  
MARAMA I TE WĀ KA  
MAHUTA AKE I TE PAE,  
TĒNĀ I TE WĀ E POUTŪ  
ANA I TE RANGI?

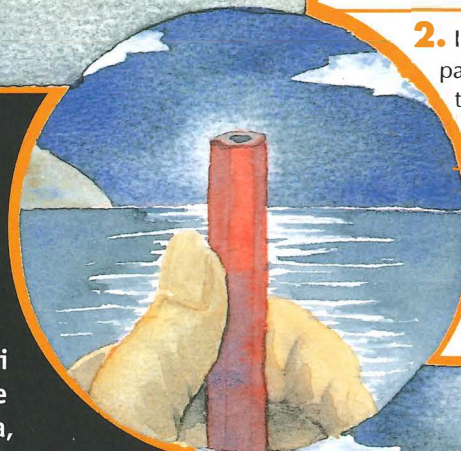
MĀ TE WHAI I TE  
WHAKAMĀTAUTAU E  
WHAI AKE NEI E  
WHAKAHOKIA AI TĒNEI  
PĀTAI.



1. Tangohia tētahi taonga āhua 8 mitamano te whānui (ka pai tonu te pene rākau). Puritia ki tō ringa, ā, kia toro atu te ringa ki mua i a koe.

HE RAHI AKE ANŌ TE  
MARAMA I TE WĀ E  
ARA ANA IA I TE  
TAHATŪ O TE  
RANGI?

Mā tēnei mahi whakamātau e kite ai koe kāore e rerekē te rahi o te mata o Hina, ahakoa kei hea ake ia e rere ana. Heoi anō, ka pōhēhē te karu he rahi ake ina mahuta ake ia i te pae. Ka kiia tēnei tūāhua ko te pohewa ki a Hina.



2. I te wā e mahuta ake ana te marama i te pae, me kopi tētahi o ō karu, ka waiho i tētahi kia puare tonu. Āta puritia te pene rākau kia kapi katoa ai te marama i a ia.

3. Whakahokia tēnei mahi i te wā e poutū ana te marama i te rangi. (Kia rite te tawhiti atu o te pene rākau i ō karu ki tērā i mahia i te takahanga 1 o runga ake nei.)





## HE KUPU WHAKAMĀRAMA I TE "POHEWA KI A HINA"

Kua takoto noa mai ki ngā roro ētahi wheako e tohutohu ana me pēhea te whakatau i te rahi o ētahi mea, ahakoa pēhea te tawhiti o aua mea. Hei whakatutuki i tēnei, ka whakatairitehia te rahi o ētahi mea kāore e mōhiotia ana te rahi ki ētahi mea e mōhiotia ana te rahi e noho kotahi mai ana ki tōu na titiro. Hei tauira, kia kite koe i tētahi waka e 500 mita te tawhiti atu, ka mōhio koe pēhea te rahi o taua waka, ahakoa e whakanamunamu mai rā. Ko ō roro e tātai ana, e whakatairite ana i te rahi o te waka me te rahi o ērā atu mea e kitea atu ana. Engari mehemea e titiro ana koe ki tētahi waka e tū kau ana i te hemanga, ā, karekau he mea i ōna taha hei whakatairitenga, ka uaua te whakatau mehemea he waka tūturu e whakatata mai ana i te tuakaihau, he waka waiore rānei e pātata tonu ana ki a koe.

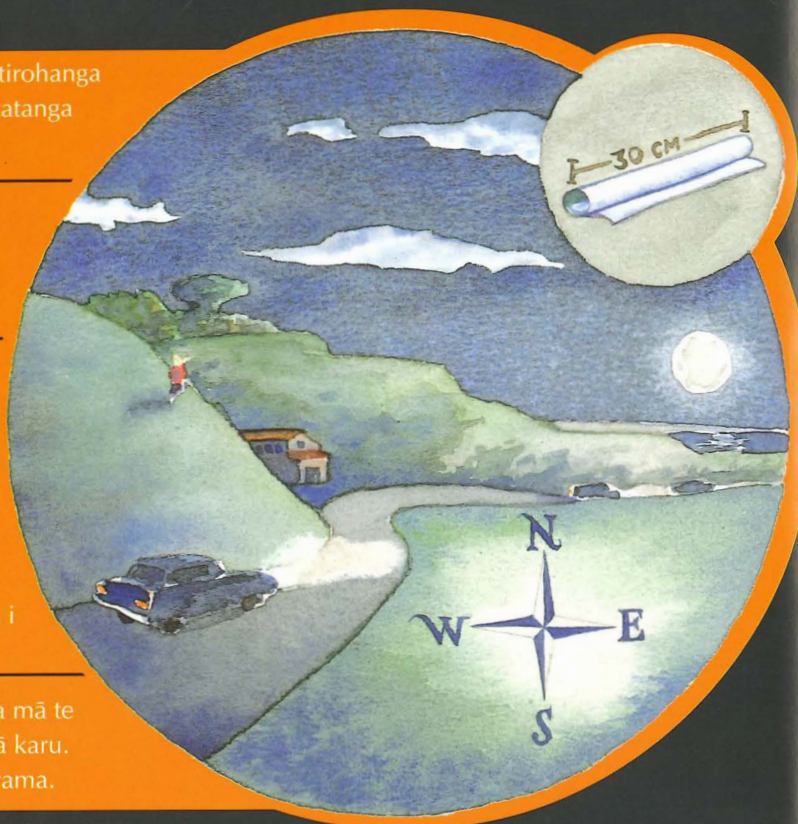
Ina titiro koe ki te marama i te tahatū o te rangi, ka whakatairitea ki ngā whare, ki ngā hiwi, ki ngā rākau e noho kotahi mai ana ki tōu na titiro. Ka riro mā tēnei e nukarau ngā roro, i te mea ka pōhēhētia he rahi tonu a Hina, ā, e noho pātata mai ana. Ka poutū haere a Hina, kāore ngā roro e raru i ngā whakawareatanga a Papatūānuku; ka tika anō te kite atu i te marama arā nei he mea rahi tonu kei te pae tawhiti, ā, kāore e raru tōu na titiro i ētahi atu mea. Mā te whakamātautau e whai ake nei e whakatūturu ēnei kōrero.

1. E tū koe ki tētahi wāhi pai hei tirohanga atu ki te pae rāwhiti i te mahutatanga ake o te marama.

2. Pōkaitia he whārangi pepa kia oti mai ai he pū ko tōna 30 mitarau te roa, ā, e 2 mitarau te whānui.

3. Ka timata te aranga ake o te marama, whakamahia te pū hei taonga titiro atu mā te karu kotahi. Me kopī tērā o ngā karu. Ko tāu e kite ai, me te mea nei kua iti ake te marama, arā, kua hoki anō ki tērā rahi ōna e kitea nuitia ana i te rangi.

4. Me kopī te karu e titiro atu ana mā te pū, ka whakapuare i tērā o ngā karu. Ehara, kua rahi ake anō te marama.



**WHAKAMĀRAMA:** Ina whakamahia te pū hei tirohanga atu, kua whāiti rawa tōu na titiro, me te aha, kua kore e kitea ērā atu mea, kei ngā taha. Nā konei, kua kore e nukarautia ngā roro.

# Māu Anō e Waihanga te

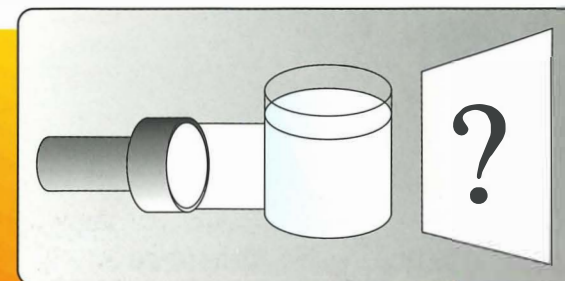
## KOKOMEA

### Nga Mea e Hiahiatia ana

He ipurau kōataata  
He rama kaha tonu, he rauata rānei  
He pune  
He wai  
He miraka  
He whārangi pepa mā

### Hei Mahi Mau

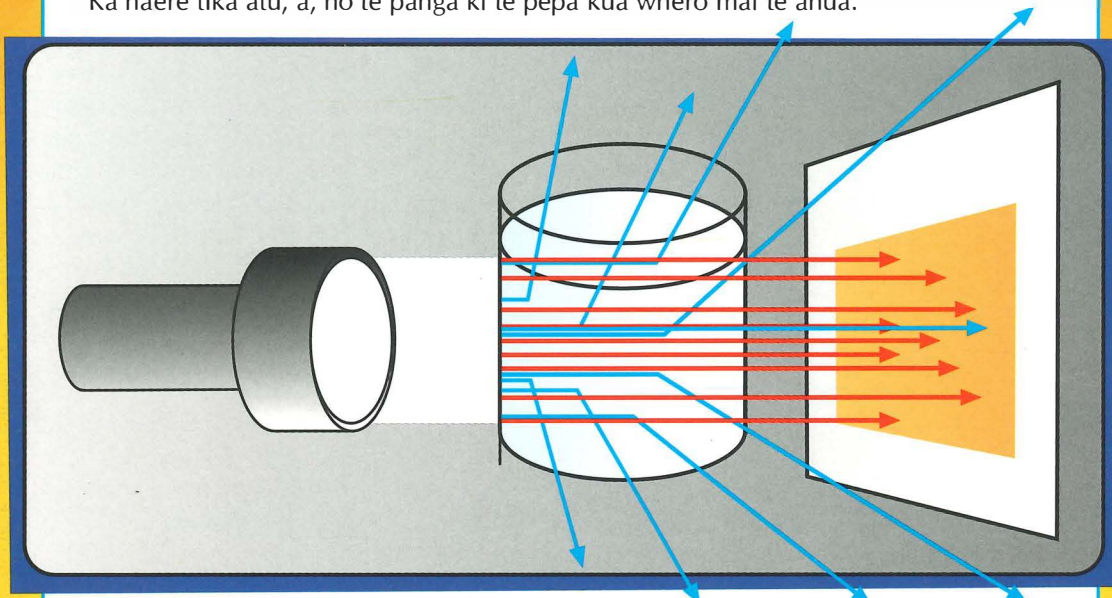
- ▼ Whakakāia te ipurau ki te wai, ka whakatū ki mua i te pepa mā (he mea whakatū anō te pepa).
- ▼ Whakakāngia te rama, te rauata rānei, me te whai kia tae atu te aho ki te taha o te ipurau, ā, atu i reira, ki te pepa.
- ▼ Āta tirohia te āhua o te marama kua pā atu ki te pepa. He aha te tae?
- ▼ Ringihia atu ētahi pata miraka torutoru nei ki te ipurau, ka kōrori. (Kia paku noa iho nei te miraka ka raua atu - ko te tikanga kua koehu noa te wai.
- ▼ Whakamahia anō te rama, te rauata rānei, kia rere ai te marama mā te ipurau, tika atu ki te pepa.
- ▼ Āta tirohia te āhua o te marama ka tae ki te pepa. Kua aha te tae ināianei?
- ▼ Ka taea e koe te tūhono atu tāu i kite ai i konei ki te āhua o te rangi ina tuhia ki te kokomea?





## Te Putakenga Mai o te Kokomea

E noho mai ana ki te aho ngā momo tae katoa. Ki te tukuna te aho mā roto i te ipurau e kī ana i te wai kua ringihia atu he miraka ki roto, ko tā ngā matūriki o te miraka, he whakapirara i te wāhanga kahurangi o te aho. Ka rere ki wīwī, ki wāwā, nō reira kāore e tino nui te kahurangi ka tae atu ki te pepa. Ka kīia tēnei tūāhua ko te whakapirara Rayleigh. Kāore te wāhanga whero o te aho e pirara. Ka haere tika atu, ā, nō te pānga ki te pepa kua whero mai te āhua.



Ko te whakapirara a Rayleigh, koirā anō te pūtakenga o te kokomea. I te tōnga o te rā, ko ngā hihi kura me ngā hihi karaka anahe ngā mea ka tomo tika mai i te kōhauhau. Ko ngā tae i takea mai i te kahurangi, ka whakapiraratia e ngā matūriki puehu e mau mai ana ki te kōhauhau. Koinei i ura mai ai te rangi me te rā, waihoki, ka pērā anō te āhua o ngā kapua. E mahi tonu ana te whakapirara a Rayleigh i ngā hāora katoa o te awatea, engari hei te hurunga me te torengitanga o te rā, hei reira āta kitea ai ōna tohu. I pēnei ai nā te mea kua tapotu haere te rā i aua wā, ā, kua nui noa atu ngā kiromita ka haeretia i roto i te kōhauhau i mua i te taenga mai ki a Papatūānuku. (Tirohia te whakaahua i raro nei.)

## Ngā hihi o te rā

I te poutūtanga o te rā:  
Kāore e kaha kitea te whakapirara a Rayleigh.

Te Kōhauhau

Papatūānuku

## Ngā hihi o te rā

I te tōnga o te rā:  
Ka kaha kitea te whakapirara a Rayleigh.

# NGĀ TĪRAMAROA

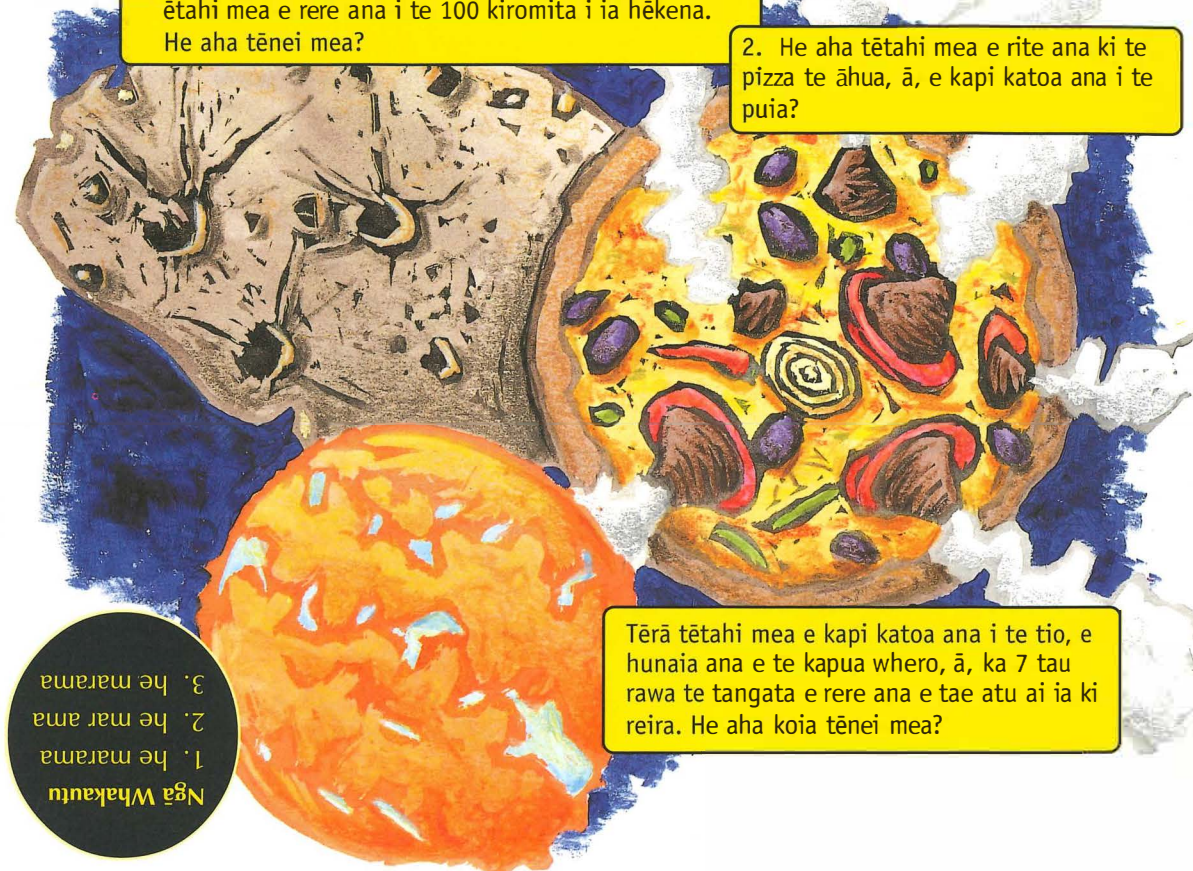
## O TE PŌ

NĀ DAVID HILL

## He Pātai

1. Tērā tētahi mea he rite ki te taewa te āhua engari e 23 kiromita te roa, ā, te āhua nei kua tukia atu e ētahi mea e rere ana i te 100 kiromita i ia hēkena. He aha tēnei mea?

2. He aha tētahi mea e rite ana ki te pizza te āhua, ā, e kapi katoa ana i te puia?



Ngā Whakautu  
1. he marama  
2. he marama  
3. he marama

Tērā tētahi mea e kapi katoa ana i te tīo, e hunaia ana e te kapua whero, ā, ka 7 tau rawa te tangata e rere ana e tae atu ai ia ki reira. He aha koia tēnei mea?

1. Ko Deimos tētahi o ngā marama e rua e āmio ana i a Matawhero. 2. Ko Io tētahi o ngā marama āmio haere i a Kōpūnui. 3. Ko Titan, te marama tino nui e āmio ana i a Pareārau. Neke atu i te 80 ngā marama e taki āmio ana i ngā aorangi o te taiwhanga o Tama-nui-te-rā, ā, hei ōna wā anō ka rokohanga atu he marama hou. Ko te nuinga o ngā marama e āmio ana i ngā aorangi tino nui e whā, arā, i a Kōpūnui, i a Pareārau, i a Takurua Whareana, i a Tangaroa. Ko te rerekētanga o te marama tēnā i te aorangi, e pēnei ana: he aorangi anake ka āmio i te rā, ā, he marama anake ka āmio i te aorangi.



# Ko Hina anake te marama o Papatūānuku.

Heoi anō, mā te aha i tēnā - karekau kē he marama e āmio ana i a Whiro rāua ko Meremere. I pērā ai nā te mea e tino tata ana rāua tahi ki a Tama-nui-te-rā, ā, ko ngā mea iti ake i te aorangi, ka kumea ake e Tama-nui-te-rā, ngaropoko tonu atu. He pakupaku noa iho ētahi marama. Ko ngā marama o Matawhero, arā, a Phobos rāua ko Deimos, kāore e nui ake i te motu o Waiheke. Heoi anō, inā kē te rahi o ngā marama nui e noho mai ana ki te taiwhanga o Tama-nui-te-rā. Arā ētahi marama e whitu (tae atu ki a Hina), he nui ake i te aorangi o Tama-i-waho. E rua he nui ake i a Whiro. Ki te whakamahia he karurua whakatata, ka kitea atu ngā marama tino nui o Kōpūnui - he tongi tiahoaho kei ōna taha.

Ko ngā ingoa o ngā marama, e hāngai ana ki te ingoa o te aorangi e āmīotia ana e tēnā, e tēnā. Hei tauira, ki tā ngā Rōmana, ko Mars te atua o te pakanga. Waihoki, ko Phobos rāua ko Deimos ngā atua o te wehi me te mauri-rere. Ko Neptune te atua o ngā moana, ā, ko ōna marama i tapaina ki ngā ingoa o ngā ika moana me ngā taniwha noho moana. He atua anō a Jupiter, ā, i kōingo tana ngākau ki ētahi tāngata o te ao kiko nei. Ko ngā ingoa o au tāngata kua uhia ki runga i ngā marama o te aorangi Jupiter.

## Te Whakapae: Pēhea te Orokohanga Mai o ngā Marama?

Nō te āhua rima piriona tau ki muri, tērā tētahi au tino rahi rawa atu. He puehu, he hau ngā mea o roto i te au. He kaha tonu te tō whakaroto o te au, ā, nā konei ka mōroto haere. I te kaha o ngā kōpētanga me ngā pēhitanga, ka wera haere te pokapū o te au nei, nā wai rā, kua kā. Ka roa ā, ka huri tōna āhua ki te rā e mōhio nei tātou. I waho atu, ka huri ētahi atu au puehu hei aorangi, hei marama, hei matakōkiri. Ko ētahi o ngā marama me ngā aorangi i tukia e te matakōkiri, ā, koirā i noho mai ai he mārua ki ētahi.

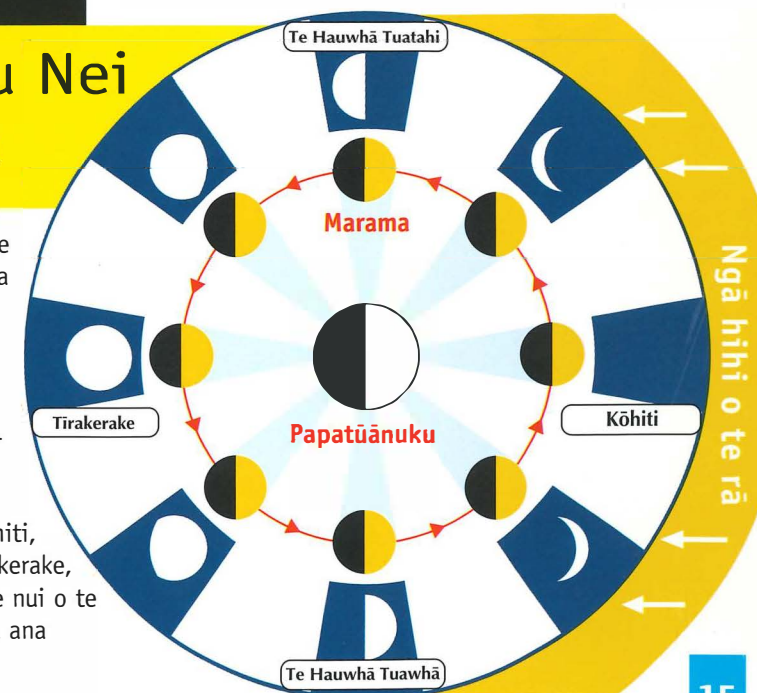
# Te Mātai Marama

Whakamahia ai e ngā kaimātai tuarangi ngā waka tuarangi me ngā karu whātata hei hanga mahere, hei whakaahua, hei toro haere i te nuinga o ngā marama e mōhiotia ana o te taiwhanga o Tama-nui-te-rā. Kua kitea ko ētahi o ngā marama pātata ki a Kōpūnui, ka 7 hāora noa iho e āmio ana i taua aorangi tino kaitā. Engari arā anō ētahi o waho atu ka pau te rua tau ki te whakatutuki i te āmionga kotahi.

He marama pakupaku e taiāwhio ana ki waenganui i ngā 'mōwhiti' rongonui o Pareārau. Kotahi anake te marama āmio i a Tama-i-waho, ko Charon tērā. Heoi anō, ko te rahi o taua marama, ko tētahi haurua o te rahi o Tama-i-waho. I tēnei ao e noho nei tātou, kumea ai ngā tai e Hina. Waihoki, ko te mata o Io, te marama e āmio ana i a Kōpūnui, ka kumea e te tō whakaroto a Kōpūnui. Nā konei, ka wera haere te kirinuku o Io, me te aha, hū ana ngā puia, me te tuha atu i ngā hau ki te takiwā - e 300 kiromita te tawhiti o te tuhanga atu o ngā hau nei. E kōpakina ana te marama tino nui o Pareārau, a Titan, i tētahi kapua hau. E whakapaetia ana nā tēnei kapua hau tērā pea kua pihi ake ētahi mea ora i te mata o Titan, ahakoa he kapi katoa i te hukapapa. Ko te marama rahi katoa o te taiwhanga o Tama-nui-te-rā, ko Ganymede, ā, he hukapapa tētahi haurua ōna.

## Tō Tātou Nei Marama

E 384,000 kiromita te tawhiti atu o Hina i a Papatūānuku. Ko te marama o Hina, ehara nōna ake; he whakaata kē tāna i ngā hihi o Tama-nui-te-rā. Ko te rerekē haere o te āhua o te marama, mai i te kōhiti, ā, tae rawa ki te tirakerake, kei te āhua tonu o te nui o te wāhi tiaho e kite atu ana tātou.





Ko te whakapae a ngā kaimātai tuarangi i ngā rā o mua, nā te tō whakaroto a Papatūānuku i kahakina ai a Hina. Tērā anō tētahi whakapae pēnei nā, he wāhanga tonu a Hina nō Papatūānuku i ngā rangi tuauri whāioio, ā, nā te tere takahuri a Papatūānuku i tōna orokohanga ake, ka motu mai tētahi wāhanga rewa ōna, arā, ko Hina tērā. Ko te whakaaro ināianei, ka takea mai te marama i tētahi tuinga nui e hia piriona tau ki muri. Ka kiia tēnei tuinga ko te 'Pōhututanga Nui'. I runga i tēnei whakaaro, tērā tētahi aorangi he rite ki a Matawhero te rahi, i tūtuki ki a Papatūānuku. I te kaha o te pātuinga, ka whiua te mahi a te toka, a te puehu ki te tuakaihau. Ka karahuihui haere ēnei maramara, me te rite anō o te āhua ki te mōwhiti, kātahi ka taiāwhio haere i a Papatūānuku. Nā wai, nā wai, ka whakakotahitia ngā maramara, ka noho mai hei marama.

Ko Hina te tuarima o ngā marama tino rahi, puta katoa i te taiwhanga o Tama-nui-te-rā.

Ko tētahi hauwhā o Papatūānuku tōna nui, engari me whakarea ki te waru tekau e rite ai tōna taumaha ki tēnei ao o tātou. I pēnei ai, nā te mea kāore e tino utoka a roto. (Ka mutu, kua kōmāmā haere i roto i te wā. Tekau mā rua ngā kaipōkai tuarangi kua takahi i te mata o Hina, ā, i whakahokia mai e rātou tētahi hāwhe tōne o ngā toka o reira hei tātari mā ngā tohunga pūtaiao). Kāore he wai, kāore he hau o tēnei marama o tātou, ā, nā te kore ua, nā te kore hau pupuhi, tērā ka pūmau ngā tapuwae o aua kaipōkai tuarangi ki te mata puaheri o Hina mō āke tonu atu.

Ki te āta titiro koe, ka kitea atu ētahi wāhi pōuri kei te mata o Hina.

Ka kiia ēnei he 'moana', ahakoa he pākihi kē i kapi i te tokarewa i ngā rā o tua whakarere. Tērā ka kitea anō hoki te tini mārūa - ko ngā wāhi ērā i tukia atu ai a Hina e te mahi a te matakōkiri. Ko ngā mārūa tino nui, he neke atu i te 300 kiromita te whānui - koirā hoki te tawhiti atu o

Taupō i Te Whanganui ā Tara. Ko te nuinga o ngā mārūa nei, kei tua, arā, kei tērā taha kē o Hina e kore rawa e kitea e Papatūānuku. He aha i kore ai? Ko te wā ka pau i a Hina ki tāna ake takahuringa kotahi, he rite ki te wā ka pau ki tana āmionga kotahi i a Papatūānuku. Nā konei, e kore rawa e anga mai tērā taha ōna ki a tātou.

I mōhio anō koe kei te āta whakarerea mai tātou e Hina? Ia tau, ka āhua kotahi kiromita te kaha tawhiti atu o tana noho. I roto i ngā miriona tau kei te heke mai, ka puta ki waho atu o te tō whakaroto a Papatūānuku, ka tirikohu atu ki a Tama-nui-te-rā. Hei taua wā, ka pōuri ake ngā pō, ka rerekē katoa ngā tai, me te āhua o ngā rangi.

He aha i noho mai ai he waiariki pupū ki te marama tino kaitā o Tangaroa, ki a Triton?

I ngā rā o tuauri whāioio, he hanga kotahi rānei a Tama-i-waho rāua ko tana marama, a Charon? Tērā rānei ko rāua rāua he marama nō Takurua Whareana i tukia atu e tētahi matakōkiri tino rahi?

# Te Mātai Marama

He aha i āhua rite ai te mata o Miranda, marama o Takurua Whareana, me ōna wakawaka maha tonu ki te mārūa kūmara?

Nā te aha i takoto mai ai he mārūa tino kaitā rawa atu ki te mata o Mimas, te marama o Pareārau? (E kapi ana tētahi haurua ōna i taua mārūa.)

Tērā anō tētahi o ngā marama o Pareārau, ko Tethys te ingoa. He aha i noho mai ai he tāwhārūa tino rahi ki tētahi haurua o tōna mata?

Tērā anō tētahi tino pātai, āe rānei he mea ora anō, he mea oreore anō e noho ana ki ngā tahataha mahana o ngā puia o Io?





# Te Rorohiko Korokē

Ngā Kaiwhakaari



Pere



Hare



Tumuaki



Hēni



Mā Tamihana



Te Reo Rorohiko



Ētahi  
Atu Ākonga

Te Kāpeka:

TĒRĀ ĒTAHI ĀKONGA ME ĒTAHI POUAKO E KŌRERORERO ANA, E KŌHUMUHUMU ANA ME TĀ RĀTOU KARAMUIMUI I TĒTAHI ROROHICO TINO NUI KUA TAU OHOTATA MAI KI TE PAPA TĀKARO.

HURI KATOA I A IA, E KĀ MAI ANA NGĀ TOENGA O TĒTAHI MEA, HE WAKA TUARANGI TŌNA RITE.

**PERE** (kua hihiko katoa te wairua). Tērā pea he waka tuarangi tēnei nō te Kura o te aorangi Issus -

**HARE** Me te mau mai o te rorohiko i kī taurangi ai ngā ākonga o Te Kura o Issus ka tukuna mai, i a rātou ka toro i a tātou i tērā tau!

**TUMUAKI** Te āhua nei i kaha tonu te tiripou mai ki te whenua - waimarie kāore he tāne o roto.

**MĀ TAMIHANA** E mea koe kāore he “tāngata” o roto.

**HARE** Arā kē pea te kōrero tika, kāore he “korokē” o roto.

**HĒNI** Āhaha - ka aroha kē te kōnukenuke! Me te rite o te āhua ki te taonga maitai i waihangatia e Pere i te kaupeka tuatahi o te tau! *Ka kata te katoa.*

**PERE** Kia mōhio mai koe i hurihia taua taonga rā hei whakapakoko, ka whakatakoto ki te pouako toi, me te aha, ka whakawhiwhia au ki te ‘A’? (*Ka āta titiro ia ki ngā mea i pae mai.*) Te āhua nei kua toiora te rorohiko. He mea takai pea ki ngā hanga kāore e pau i te ahi. Māringanui tātou!

**MĀ TAMIHANA** (*me te hiki ake i tētahi pouaka kua kaininga e te ahi, kua hē katoa te āhua. Kei te āhua kitea atu ngā kupu NGĀ TOHUTOHU o runga.*) Engari anō ngā tohutohu, kāore ērā i toiora. (*Nā te matangurunguru, ka nguru te katoa.*)

**PERE** Ā, kāti. Te āhua nei mā tātou anō tātou e kuhu.

**HARE** Āna. Te tikanga mēnā nā te ringa ākonga korokē i hanga, ka kitea tonutia e tātou me pēhea te whakamahi.

**TUMUAKI** Koinā te kōrero! Mā Mā Tamihana e whakahaere te hōparatanga. Tēnā kia haria ake te rorohiko ki rō whare.

**MĀ TAMIHANA** Kātahi nā te whakaaro! I te mea ko Hēni rātou ko Pere, ko Hare ngā kaitirotiro rorohiko, ko rātou hei kaiāwhina mātāmua.



Ka nekehia te rorohiko e ngā kaihōpara tokowhā ki mua o te atamira, kia āta kitea ai e te hunga mātaki. Kei te mata o te rorohiko, ko ngā pū A, H, K, M. Tērā anō tētahi kaniwha, ko te kupu WHAKAROTO kei runga, me tētahi atu ko te kupu WHAKAWAHO kei runga. Tērā anō tērā pātene KĀ/WETO. Ka kuhu mai te **TUMUAKI**, e mau ana i tētahi pouaka maitai. Kei te taha o te pouaka, ko ngā kupu KĀRI ROROHiko.

**TUMUAKI** I tūpono au ki ēnei i te taha o ngā toenga waka. Tērā pea he tino taonga tonu. Kia kaha koutou! (Ka puta atu te **TUMUAKI**.)

**HĒNI** Tēnā kia tīmata tātou.

**MĀ TAMIHANA** Ā, he whakaaro pai tēnā. Tēnā e Pere, whakakāngia ake.

Ka whakakāngia e **Pere** ... he aha te aha.

**HĒNI** (me te menemene anō). Me puru anō pea ki te kōhao hiko!

Ka purua atu e **Pere**, anā, kua kimokimo ngā karu.

**HARE** Koia, koia! Engari kua aha iāianā?

**HĒNI** Ka pēhea mēnā ka whakamātauria tētahi o ngā kārī?

**PERE** Engari karekau he kōrero o runga.

**HĒNI** Heoi anō, he aha te hē o te whakamātau i tētahi.

Ka whāngaihia atu e **PERE** tētahi ki te kaniwha WHAKAROTO. Ngaro atu ana te kārī, me te whakangaro atu a Hēni i a ia, mō te tūpono ka pahū. Ka kōhumuhumu te rorohiko, kātahi ka tuhaia atu te kārī mā te kaniwha WHAKAWAHO.

**TE REO O TE ROROHiko** (kia rite te tangi ki te maitai) Pānuitia ngā tohutohu!

**PERE** Kāore rā e taea! He aha kei runga i te kārī?

**HĒNI** He kore noa iho. Kāore hoki i tuhia he kōrero ki runga.

**PERE** Hmm, ko te tikanga pea o te WHAKAROTO, me rau māriri tētahi mea whai kiko nei ki roto.



**HARE** Ā, ko taua 'mea' rā, me neke atu i te kārī noa iho, kāore he kōrero o runga. Me tuhi e tātou he kōrero ki runga.

**PERE** He aha te mea mō runga i te kārī - he kupu?

**HĒNI** Tērā kē pea me whakaahua.

**HARE** He tau, me tuhi he tau! Kāore pea ngā tamariki o te Kura o Issus i whakarite i te rorohiko kia pānui i ngā kupu o konei.

**PERE** He tika tāu. Ko te hē māriri o tō rātou reo Māori. Ka mutu, nōhea hoki te whakaaro ko te whakaahua te mea tika hei rau atu.

Ka tuhia atu e **PERE** he '3' ki te kārī, ka whāngai atu ki te kaniwha WHAKAROTO. Kua kōhumuhumu anō te mihini, me te tuha atu i te kārī mā te kaniwha WHAKAWAHO.

**HARE** (me te hīamo anō) He mea anō kei runga! He aha tēnei tohu?

**HĒNI** He '9'. Kua noho mai he 9 hei hoa mō te 3.

**HARE** He aha te tikanga o tērā? Tē aro i a au!

**PERE** Taihoa pea ka kitea te tikanga. He mātau hoki aua tāhae rā o te Kura o Issus. Heoi anō tā tātou, he kimi mai i te māramatanga, ki tā rātou titiro.

**HĒNI** Tēnā kia whakamātauria e au he tau atu anō.

Ka tuhia e Hēni he '5' ki te kārī, ka whāngai atu ki te kaniwha WHAKAROTO. Ka tāia mai e te rorohiko te '11' ki te taha o te 5. Kātahi ka tuhia e MĀ TAMIHANA ngā tau nei ki te papa tuhituhi:

|           |   |    |
|-----------|---|----|
| WHAKAROTO | 3 | 5  |
| WHAKAWAHO | 9 | 11 |

**HARE** He tauira tonu - kāore e kore, he tauira tonu.

**PERE** Engari me nui ake i te rua ngā tau e kitea ai te tauira. Tēnā whakamātauria anō ētahi tau, e kare.





Ka tuhia atu e **Hēni** te '9' ki te kāri. Ehara, ka puta mai ko te '15'.

**PERE** He aha koe i kōwhiri ai i te 9?

**Hēni** He hiahia nōku kia mōhio mēnā ko te 3 te whakautu a te rorohiko.

**PERE** Ana, kāore i pērā, nō reira me whakamātau anō tētahi.

Whāngaihia atu ana e **Hēni** he tau atu anō. Tāia mai ana e te rorohiko he whakautu anō. Me te tuhi raupapa atu a **MĀ TAMIHANA** i ēnei kōrero ki te papa tuhituhi, pēnei nā:

|            |   |   |   |    |    |
|------------|---|---|---|----|----|
| WHAKAROTO: | 0 | 1 | 3 | 5  | 9  |
| WHAKAWAHO: | 6 | 7 | 9 | 11 | 15 |

**PERE** Ira! Katoa ngā tau a te rorohiko, he nui ake i ā tātou.

**Hēni** Tēnā kia āta titiro tātou he aha ngā tāpiritanga. Kei reira pea te tauira.

I te taha o te rārangi tuatahi, ka hoatu e **MĀ TAMIHANA** te rārangi e whai ake nei ki te papa tuhituhi:

0+6=6  
1+6=7  
3+6=9  
5+6=11  
9+6=15

**HARE** Kua taka te kapa iāianā! Kua tāpiria noatia te 6 ki ngā tau e whāngaitia atu ana.

**Hēni** Kāti koirā te mahi i te wā e 'A' mai ana te mata. Me huri pea ki te 'H', kia kitea ai pēhea tērā.

**MĀ TAMIHANA** Kia kaha, hoea tō waka.

Ka hurihia e **Hēni** te mata ki te H, kātahi ka whakauru atu i ētahi atu tau. Puta mai ana ngā whakautu a te rorohiko, me te tuhi raupapa a **MĀ TAMIHANA** i ēnei kōrero hou ki te papa tuhituhi.

|           |   |   |   |    |    |
|-----------|---|---|---|----|----|
| WHAKAROTO | 0 | 1 | 3 | 5  | 9  |
| WHAKAWAHO | 3 | 5 | 9 | 13 | 21 |

**PERE** Tē kitea e au he tauira i roto i ngā tau kua noho mai ki te taha o ā tātou ake, atu i te rahi ake o ā te rorohiko. Ka pēhea mēnā ka whakamātauria ētahi atu, hei whakakīki i ngā mokowā?

Ka hoatu e **Hēni** ngā tau o te raupapa e hapa ana, ka puta mai i te rorohiko, me te tuhi a **MĀ TAMIHANA** ki te papatau.

|           |   |   |   |   |    |    |    |    |    |    |
|-----------|---|---|---|---|----|----|----|----|----|----|
| WHAKAROTO | 0 | 1 | 2 | 3 | 4  | 5  | 6  | 7  | 8  | 9  |
| WHAKAWAHO | 3 | 5 | 7 | 9 | 11 | 13 | 15 | 17 | 19 | 21 |

**PERE** Kei te kitea atu he tauira ināiana. Ko ā te rorohiko, he tau kehe katoa, ā, e 2 te pikinga ake mai i tētahi ki tētahi.

**Hēni** Kei a au! Ko tā te rorohiko, he whakarea i ā tātou tau ki te 2, kātahi ka tāpiri i te 3.

Ka umere te katoa.

**HARE** Ka mau te wehi! Kia whakamātauria e au he hautau - ka pēhea te 1/2.

Ehara, he 4 te whakautu a te rorohiko.

**MĀ TAMIHANA** Kei runga noa atu koutou! Te āhua nei ko tā te 'A' e tohutohu ana, kia tāpiria he 6, ko tā te 'H', he tohutohu ka whakareatia ki te 2, ka tāpiri i te 3. Ā, kāti, kia kite tātou he aha tā te 'K'.

I konei, ka whāngaitia atu ēnei tau: 1, 2, 3, 4, 5, ā, anei ngā hua ka puta ake: 4, 6, 8, 10, 12. Ina hurihia te mata ki te 'M', me te whāngai atu i aua tau anō, anei ngā hua ka puta ake: 2, 5, 8, 11, 14. Ka haere tonu te whakaari, i runga i te whai i ēnei kōrero hou. Heoi anō, kia waiho mā te hunga mātakitaki e whiriwhiri he aha te ture e whāia ana e te rorohiko.



# Kirikā

nā Rupert Atchin

Mōhio tonu a Chequa kua eke tonu ngā rā i a ia. Kua kaha te pā mai o te malaria ki a ia. Mamae ana ngā uaua katoa o tana tinana. Ka aroha te pāorooro o te māhunga, ā, i ōna wā anō kua rehu ngā mata. Kua eke tonu te kirikā ki tōna taumata. Kua pōraruru katoa ngā whakaaro, engari ka mahi tonu ia kia pokaina atu he ara mōna i roto ngā koukouoro o te wao nui o Peru. Heke ana ngā werawera i tōna rae, ka ngau ki ngā mata. I te kaha matewai, ka mitimiti i te tōtā kei tōna ringa, ahakoa kua marū, kua nanatua. Kāore tonu i ngata tōna hiawai.

Kua kore a Chequa i tino tawhiti atu i tōna pā, engari riro katoa ana ōna mahara i te kaha pā mai o te kirikā. Ahakoa te torehapehape o te whenua, ka ngaoki haere tonu ia. He aka e haukotī ana i tana haere, ā, he rārā kōi e nanatu ana i tōna kiri kakā. Heoi anō, he aha rā, ka ū tonu ia. Mehemea he kaha tonu kei roto i ōna kōiwi, kua whakamau atu ia kia kitea rawatia he wai māna. Ka mau atu tana ringa ki tētahi kāpuinga aka, ka āta kukume mei kore e taea te whakamatika ake. Engari i te tino kino o te takaānini, ka hinga, ana kei raro anō e tāpapa ana i waenganui i ngā māheuheu. Takahirihiri ana, takahurihuri ana i tētahi tahataha e tupuria ana e te huruhuru whenua, ā, pā rawa ki te kahiwi o tētahi rākau nui tonu.

Ka āhua roa tonu ia e takoto ana, me te riro haere o ana mahara i te ao mārama nei. Mōhio tonu ia kua tata mai a mate, me te pai ōna ki tērā whakaaro. Pai noa ki a ia tana rongo i te anu e toro ana i tana waewae mauī. Ka paku ngaoko, kātahi ka mōhio ake ko te mātao e rongo ana ia, ehara kau ana i te anu mātao o te mate - e takoto kē ana tana waewae ki tētahi hāpua! Ka whakatata atu ia ki te wai. I te kaha matewai ōna, kua āhua rongo kē te waha i te hāhā o te wai i mua i te inumanga. Ka tuohu te māhunga, ka mea ki te inu. Aeha! Kua kawa katoa te wai. Ka tuhaina atu e ia. Ka anga atu te titiro ki ngā rākau e karapoti ana i te hāpua - he rākau quina-quina.

E mōhio whānuitia ana he tāoke kei roto i te peha. Kua uru atu ngā kino o te quina-quina ki roto i te wai, me tana mōhio iho kua kore kē he oranga mōna i konei.

Hei aha koa. Ka whakaangi atu te tamaiti nei ki te hāpua, ka inu mārīre i te wai, me te pōruturutu kia mātao ai tōna māhunga. Mehemea kua kore e roa tana noho mai ki te ao tūroa, he aha te hē o te inu o te wai kia ea noa ai te hiainu? Ka mutu te inu, ka tīraha mai i te kaha ngenge. Taihoa, ka warea e te moe. Ka aroha ngā moepapa, ngā turituri, ngā taipō i puta mai ki a ia. Kāore ia i mōhio pēhea rawa te roa ōna e rotua ana e te moe, engari e kore e wareware i a ia tana ohonga ake. Kua kore katoa te kirikā! E āhua pāorooro tonu ana te māhunga, ā, kua ngoikore katoa te tinana, engari me te mōhio anō o Chequa kua toa ia i tana whawhai ki a Rūrūtaka, ā, ka ora anō ia.

He aha rā kei roto i te rākau quina-quina i kawa ai te wai, nāna i patu tōna mate? Kua rikarika katoa ia ki te whakahoki kōrero ki te tohunga o te pā. E hia rau tau i muri mai, ka whakamahia ngā tino o te peha quina-quina hei whakaora ake i ngā tāngata tini māioio kua pā ki a rātou te malaria. Koinei noa ake rā ngā kōrero tuku iho mō te tūponotanga atu o Chequa ki te quinine.



# “Eureka!”

## Ngā Kītenga Pokerehū o te Ao Pūtaiao

### He Wero Paku Noa

Pērā anō i te rokohanga atu o te rongoā mō te malaria i Amerika ki te Tonga, ka timata mai te tuku kano tahumaero hei ārai mate i te rokohanga atu o ngā rongoā māori a tēnā iwi, a tēnā iwi, puta noa i te ao.

Tērā tētahi tākuta o Ingarangi, ko Edward Jenner te ingoa, i rongonui i tana whakaaratanga ake i te tikanga tuku kano tahumaero hei ārai mate. Nō te tau 1796, ka ki ake tētahi wahine kutētē kau ki a Jenner e kore rawa e pā mai ki a ia te koroputaputa, i te mea kua pā kē ki a ia te koroputa kau. I ahu mai te koroputa kau i ngā kau e tiakina ana e ia, heoi anō, ehara tērā i te mate tino kino, pērā i te koroputaputa. He mōhio katoa te hunga noho taiwhenua ki tēnei āhuatanga. Ka rangahaua e Jenner tēnei kōrero i rongo pokerehū ana taringa. Ko tāna i kite ai, ehara, me uaua kē ka pā te koroputaputa ki te hunga kutētē kau. I ngā tau whai i muri mai, ka mahi a Jenner ki te whakapakari i te tikanga e werohia atu ai he koroputa kau kia paku nei ki te hunga hauora, kia kaha ai rātou ki te ārai atu i te koroputaputa.



I ngā tau o ngā 1800, ko tōna 60 miriona ngā tāngata i mate i te koroputaputa i ia tau. Taka rawa mai ki waenga o ngā 1900, nā te tuku kano tahumaero hei ārai atu i te mate, kua kore e kitea tēnei mate i te Uru - ā, i muri mai, i te katoa o te ao. Ko te wāhi whakamutunga i kitea ai tētahi tangata pāngia e te koroputaputa, ko Somalia, i te tau 1977. Kua araara tonu te ingoa o Jenner mōna i whakakore i tērā mate. Engari kāore e tino rongonui ana te ingoa o Lady Jane Montagu.

I a ia e toro haere ana i Turkey i te tau 1717, ka kite ia i tētahi tikanga rongoā tino rerekē nei. I te ngahuru i ia tau, ka whakarāmementia e ngā kuia o tētahi pā ngā rangatahi tērā ka pā ki a rātou te koroputaputa. Ka werohia tētahi ia totopango o tēnā, o tēnā, ka whakamahi i te koi o te ngira hei kōkuhu atu i te ero kia iti nei o tētahi tangata kua tau kē ki a rātou te koroputaputa. E waru rā pea i muri mai, ko te hunga i whāngaihia ki te 'kano' o te tahumaero, ka āhua pāngia e te koroputaputa, engari taro ake, kua piki anō te ora ki a rātou. Waihoki, e kore e tau anō ki a rātou tērā mate.

Kāore a Lady Mary i rite ki te nuinga o ngā kōhine o ērā wā - he whai mātauranga hoki ia. Kāore i tukuna e tana matua ki te kura, engari nāna tonu ia i kuhu, me te pānui i ngā pukapuka kei te whare pukapuka o tana pāpā. Nōna ka hoki mai i Turkey, ka whakahāngai i ōna mātauranga hou hei painga mō te tangata. Ka whakamahia e ia ngā mau herehere me te hunga pani hei whakamātau i ngā tikanga tuku kano tahumaero hei ārai mate. I puta ōna hua pai, ā, ka whakawhere a Lady Mary i a Caroline, Tapairu o Wēra, kia mahia ētahi o ana tamāhine tokorua. Ka hōrapa atu tēnei tikanga ki Ingarangi whānui, tae atu ki Uropi.

Otirā, he kaha tonu te whakahē a ngā tākuta me ngā hāhi i te mahi a te wahine nei. Arā hoki tētahi 2.5% o ngā tāngata i hemo, tē whakamāui ake i te kano tahumaero i tukuna ki a rātou. I whakamahia tēnei kōrero hei whakamataku i te iwi whānui, me te aha, i whakarerea atu tēnei tikanga mō tētahi wā roa tonu.



## Ngā Painga o te Hōpurupuru

Nō te tau 1928, ka tūpono noa a Tā Alexander Fleming ki tētahi rongoā tino rongonui. I roto i āna rangahautanga, e āta whakatupu ana ia i ētahi kitakita staphylococci i roto i tētahi paepae. I tētahi rā, ka kite ia i tētahi wāhi o te paepae kua kore e tupuria e te kitakita. Ka āta titiro atu, ka kite atu he hōpurupuru kē e tipu ana i taua wāhi rā. Nā te hōpurupuru, kua kore i tupu te kitakita. Nō te puninga Penicillium te hōpurupuru, ā, ko te rongoā paturopi kua takea mai i a ia, koia tērā ko te penicillin, e mōhio whānuitia ana i ēnei rā.

Tere kino ai ngā paepae pāreke, ā, ko tā te nuinga o ngā tohunga pūtaiao, he porowhiu i te pāreke, ka tīmata anō. Engari anō a Fleming. Ka maumahara ia ki tētahi āhuatanga i pā ki a ia i te tau 1920. E rewharewhahia ana ia, ka tahuri ia ki te whakatupu i ētahi kitakita. Ka heke tētahi o ana roimata ki te paepae pāreke.

Aoake, ko te wāhi karapoti i te roimata, kua kitakita kore. Ko tana whakapae, he mea anō kei roto i te roimata nāna i patu ngā kitakita. I tika anō tāna. Ka rohea e ia te pūmua whākōki nāna taua mahi, ka tapaina ki te ingoa lysozyme. I te mea i pūtakea mai i te tinana tonu, kāore ōna pānga kino ki te tinana tangata. Heoi anō te raru, ko ngā kitakita pai anake tāna i whakamate ai. Engari ka pūmau tonu ēnei māramatanga hei āwhina i a Fleming i ngā tau e waru i muri mai.

Pērā tonu i te lysozyme, kāore he pānga kino o te penicillin ki te tinana tangata. Engari he kaha kē te penicillin ki te patu i ngā kitakita whakamate tangata. I te wā o te Pakanga Tuarua o te Ao, ka whakapau kaha ngā kairangahau ki te āta rohe, ki te iheuheu, ki te whakakaha anō hoki i te penicillin. Ko te penicillin te rongoā paturopi tuatahi kāore he tāoke o roto, ā, e hia miriona ngā tāngata i whakaorangia ake e tēnei tino rongoā i te wā o taua pakanga. Kua pūmau tonu tēnei rongoā whakahirahira hei taonga patu i ngā mate kakā kino. Arā te mea whakamīharo katoa, ko te pūtakenga mai o tēnei rongoā, ko te maringi o te roimata.

## He Taura Pūataata Anō

Nā te kōataata haumarua kei ngā matapihi waka, kua kore i tino kino te whara o te mātinitini ka haere mā runga waka. He pakaru rikiriki tonu tā te kōataata haumarua, engari kāore e rere ki wīwī, ki wāwā. Ka toipoto tonu ngā kota, nā te piri mai o tētahi kiri angiangi, he kirihou akuaku. I hua ake te kōataata haumarua i tētahi hauata taiwhanga pūtaiao i te tīmatanga o ngā 1900. Mokori anō tēnei tūāhua, i te mea koirā anō te takiwā i tokomaha noa ake ai ngā aituā motokā.

Tērā tētahi tohunga raweke matū ko Edouard Benedictus te ingoa. I te tau 1903 ka taka i a ia tētahi puoto. Ka pūrikiriki i te taunga ki te papa, engari kāore i marara ki te tī, ki te tā. Ka noho tōpū tonu ngā maramara, me te mau tonu o te hanga o te puoto. He wē matū anō i roto i te puoto i mua atu, arā he cellulose nitrate, ā, i noho mai ngā toenga hei momo kiriwai i roto i te puoto. He pūioio tonu te kiri nei, ā, nō te pakarutanga o te puoto, ka whakamaui ngā maramara kia tina tonu. Ka puritia e Benedictus te puoto, me te tuhi anō i ngā kōrero mōna. I ētahi wiki i muri mai, ka pānuitia e ia ngā kōrero mō ētahi aituā motokā e rua i kaha te whara o ngā tāngata i te rerenga o te kōataata.

Ka mōhio ia ko te hauata i pā i tana taiwhanga pūtaiao te takenga mai o tētahi rongoā mō tēnei tūāhua. Ka tīkina atu tana puoto, ka noho ki te whakamātau haere. Nō te paunga o te rā o muri mai, kua hangaia e Benedictus te mata kōataata haumarua tuatahi.



# Te Noho i te Pōuriuri

nā Douglas Carian

Ko te whakaritenga, kia tūtaki te kaiwhakahaere kaupapa huna, a Mata Kīrea, ki a Pora 'P' i tētahi whare rokiroki kua whakawāteatia, i waenganui pō.

Heoi anō, tērā pea he kākano whakauru a Pora 'P', ko tāna, he kahaki i a Mata Kīrea.

He pepa kei a Mata Kīrea hei hoatu māna ki a 'P'. Arā anō ētahi 'pene' tekau kei tana pūkoro. Ehara kē i te pene tūturu, he taputapu kē hei whakaora i a ia.

E whā o aua pene, he pene tuku karere ā reo irirangi. E toru, he pukapuka waitohu tārehu, e rua atu anō, he mīhini tango whakaahua, ā, ko te pene whakamutunga, he taonga kaweoru e mōhio ai ōna rangatira kei hea ake ia e hāereere haere ana.

Mehemea kua pōuri kenekene, e hia te tino iti o ngā pene ka taea e ia te tango ake, me te mōhio pū ōna kua tangohia ake ēnei e whai ake nei:

1. kotahi te pene kaweoru?
2. kotahi o tēnā momo, o tēnā momo?
3. he pene tuku karere ā reo irirangi, he mīhini tango whakaahua rānei?
4. he pene tuku karere ā reo irirangi kotahi, ME tētahi mīhini tango whakaahua?

Arā ngā whakahoki tika, kei te taha whakaroto o te uhi o muri.

# He Aha te Tapeke?

I roto i te kēmu whutupōro, anei ngā momo whiwHINGA ka taea:

- 7 whiwHINGA (mō te piro ka tika te whana whakaū);
- 5 whiwHINGA (mō te piro ka hē te whana whakaū);
- 3 whiwHINGA (mō te whana whiu);
- 3 whiwHINGA (mō te whana taka)

I te mutunga o tētahi tākaro, kua 10 ngā whiwHINGA a tētahi o ngā tīma. E toru anake ngā huarahi i pēnei ai te tapeke:

- he piro i tika te whana whakaū, me tētahi whana whiu (7+3)
- he piro i tika te whana whakaū, me tētahi whana taka (7+3)
- e rua ngā piro, kaōre i tika ngā whana whakaū (5+5)

Tekau mā rima ngā whiwHINGA i riro i te hoariri.

- 1) E hia katoa ngā huarahi i riro ai ko tēnei te tapeke a te tīma tuarua?
- 2) E hia katoa ngā huarahi e 20 ai te tapeke ki tētahi tīma, mehemea kotahi anake te whana taka?
- 3) Mehemea kotahi anake te whana whakaū, e hia katoa ngā huarahi ka taea e 30 ai te tapeke ki tētahi tīma?

Arā ngā whakahoki tika kei te taha whakaroto o te uhi o muri.





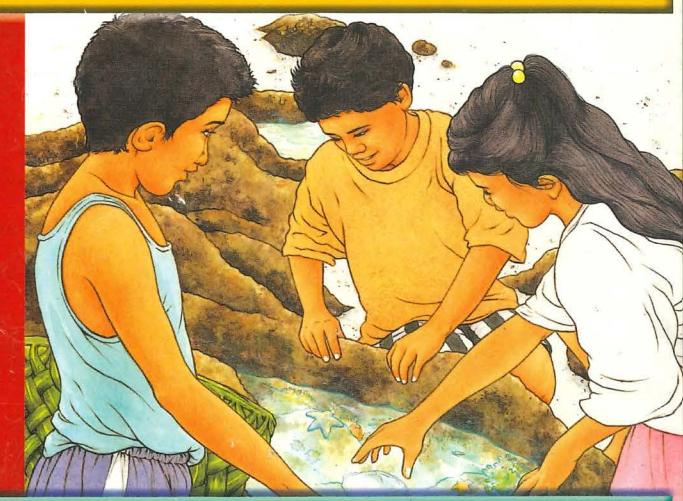


# Tūhono Tahī 2000



Whakatipua āu ake Kōataata

Te Take mō te tipuna  
tekau mā toru tau te pakeke



Te Rā Rangahua



Ko Tūhono, he rārangi kōrero,  
he mea tātai i te tū o te  
pāngarau, o te pūtaiao me  
te hangarau i te horopaki  
o te ao o ngā ākonga.

He tīmatanga noa iho ēnei  
tuhituhinga hei wero i te hinengaro  
o ngā ākonga ki te whakahaere  
whakaaro e pā ana ki ētahi atu  
hōparatanga.

Ko te tikanga o ngā ngohe, he  
whakaoho ake i te harakoa o ngā  
akoranga pūtaiao, pāngarau me te  
hangarau.

I hangaia a Tūhono Tahī mō ngā  
ākonga e mahi ana i ngā taumata 1  
ki 2 o te Marautanga o Aotearoa.

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Tuhono tahi

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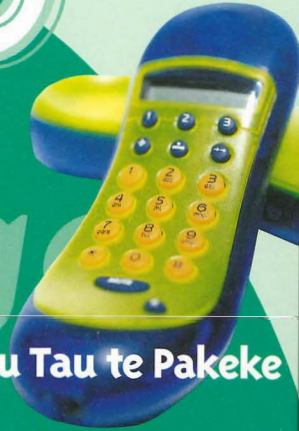
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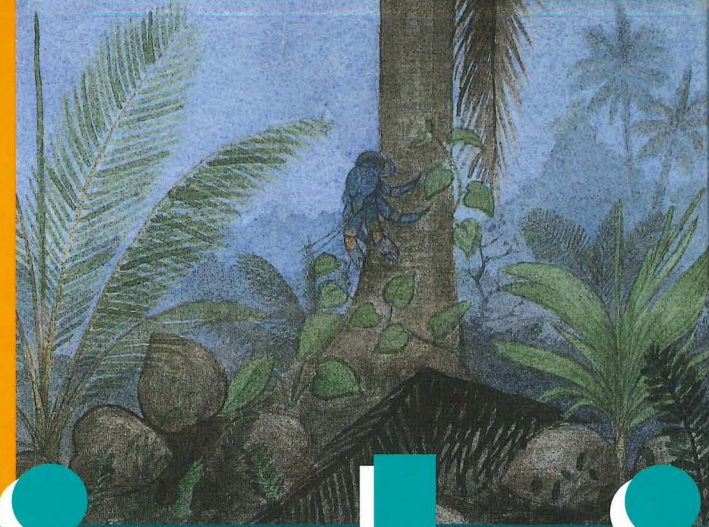
Te Pou Taki Korero  
Te Whanganui ā Tara



He pō mārāma, ā, e whiti  
ana te mārāma i tētahi moutere o  
Te Moana nui ā Kiwa. E wawara mai  
ana tētahi mea i ngā mānuka - he  
mea rerekē, he mea e matekai ana!  
Ai! E ngōki mai ana a Uga, te  
pāpaka kokonati. Āta haere ana  
tana haere i a ia e ngōki ana i te  
rākau kokonati.



Haruru ana te  
ngahorotanga o ngā  
kokonati taumaha. Tere  
tonu te heke o Uga ki te  
whai i a rātau.



# Te Kai a Uga i te

# Ahiahiahi

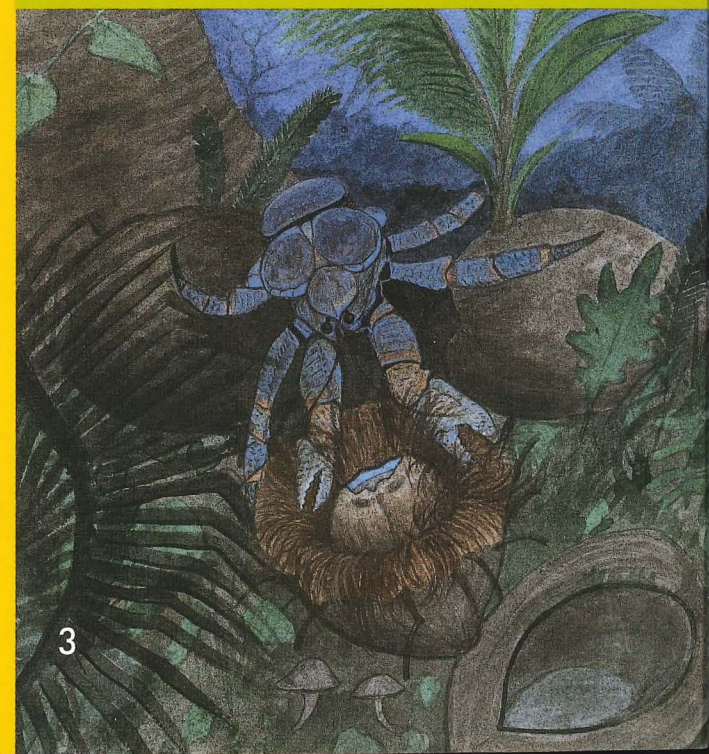
nā Asenaca Vakamino i tuhi  
nā Falcon Halo ngā pikitia

Ka haere, ka haere, ā,  
kua tae a Uga ki te tihi  
o te kātua o te rākau  
teitei rā. Koirā tonu te  
wāhi mōna - i te wāhi  
teitei tonu, te wāhi e  
tautau ana ngā  
kokonati i raro i ngā  
rau. Ka katikati haere  
ia. Ka mahi haere ia me  
ōna matihao nunui,  
matihao koi.



Pakere, pakere, pakere.  
Ka tihore haere ia i te pakere,  
ngā paparanga o waho. Pakō  
ana te haere i a ia e wāwāhi  
ana i te anga mārō mā ōna  
matihao - me tana ruku i  
ōna matihao ki roto ki te  
kikokiko mā o te kokonati.  
Ka Reka hoki!

Ka whakaaro ake a Uga,  
“Kua tae ki te wā me  
kai anō au!”





# Pūkaha

Kei te matekai anō te pāpaka rā a Uga. Ka ngōki ake ia i te pō ki te kimi rākau kokonati. Ka whiriwhiria e ia te rākau he hāngai tonu ana te tū o te kātua. Ka mea ia ki te piki ki te pūtake o te kātua mā ōna matihao pakari o mua. Papā ana tana haere!



# mō Pukapuka

He rākau tino rerekē tēnei. Nā te mārō o te kātua, kāore e taea e Uga te pupuri mā ōna matihao. Oma haere ana ia ki te kimi i tētahi rākau he ngāwari kē atu te piki.

Ko te rākau e mea ana a Uga ki te piki, ehara kē i te rākau. He pou rama maitai kē! Engari ehara i te pou rama noa iho. I te motu o Pukapuka i Kuki Airani, ahu mai ai te hiko mō te katoa o ngā pou rama i te pūngao kōmaru. Ko te Rā te pūtake o te pūngao kōmaru. He wāhi tino wera a Pukapuka, e whitikia ana e te rā, nō reira e tika ana te whakamahi i te pūngao kōmaru i reira.

Putā noa i te rangi kei te hopu pūngao te rārangi kōmaru, kei te tihi o te pou rama mai i te Rā. Whakaputua ai te pūngao ki roto pūhiko. I te pō ko taua pūngao anō kei te whakakā i ngā rama o ngā tiriti. Nō reira ka hiahia ana te tangata ki te haere ki te kite i tētahi atu, kāore he māharahara mō te hoki ki te kāinga i te pō.



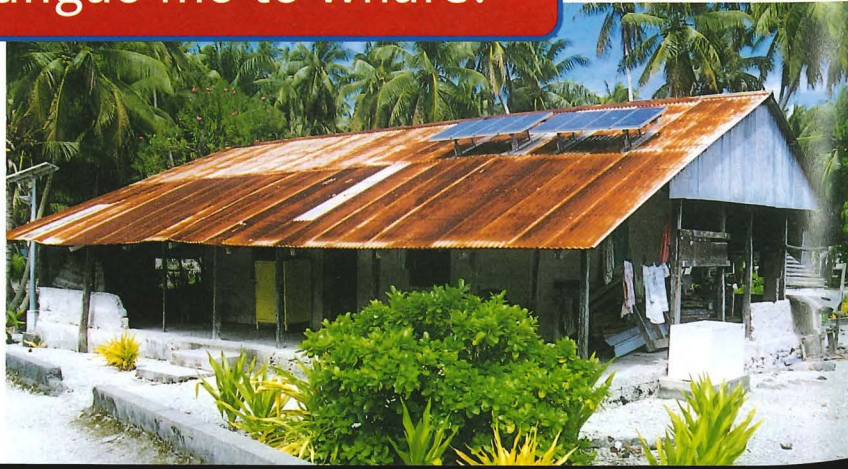




Kei te noho tonu ētahi tāngata o Pukapuka i roto i ngā whare tuku iho e mōhiotia ana he wale. He hauangi ake ēnei i ngā whare hou, ngā whare raima kei ētahi atu o ngā tāngata o Pukapuka. He maha ngā whare, arā, ngā whare tuku iho me ngā whare hou he rārangi kōmaru to ērā. Honoa ai te rārangi nei ki tētahi pūhiko kaitā i te oneone i te taha o te whare. He wāea, he pouaka whakaata, he rīpene ataata a ētahi o ngā tāngata. He rama hiko kei ngā whare katoa, nō reira he mea tino whai kiko kia whiwhi te iwi ki te hiko ngāwari te utu.

Ehara i te mea he hiko katoa ngā mea o ngā whare i Pukapuka. Kei te tao kai tonu ngā tāngata i waho i runga ahi, i roto umu kapuni rānei. Mauria mai ai ngā pounamu kapuni mā runga kaupuke mai i te tino motu o Rarotonga.

**Nō hea te pūngao mō tō whare?**



# Te Rā Rangahua

he pakiwaitara nō Kiribati  
nā Temanori Tiree

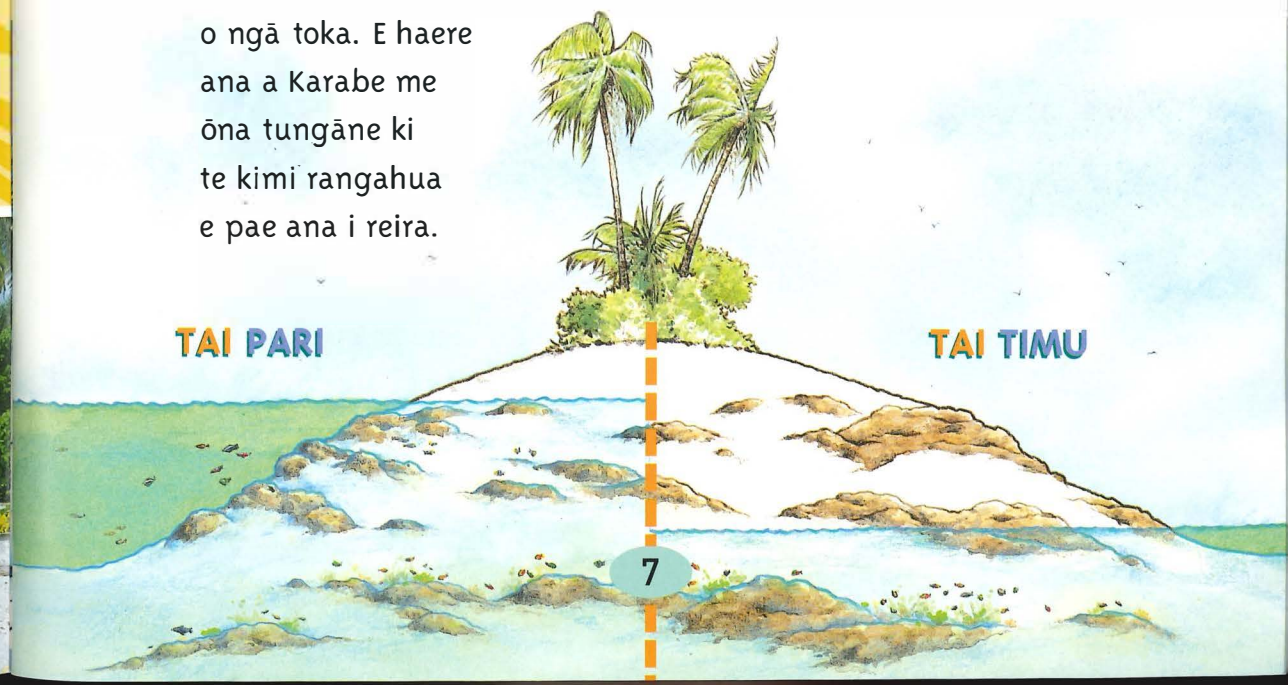
**Kātahi anō, ka tae ki te wā hararei mō te kura.** Engari kāore tonu a Karabe rātau ko ōna tungāne tokorua e āhei ki te moe roa. Ka ūmere atu a Karabe, "Haere mai Makiki! Maranga ake Bure! Koinei te rā rangahua."

He tino mea ki ngā tamariki te kautū ki te motu iti i te takutai moana o tō rātau kāinga. E haere ana rātau ki te kohikohi rangahua hei hapa mā rātau.

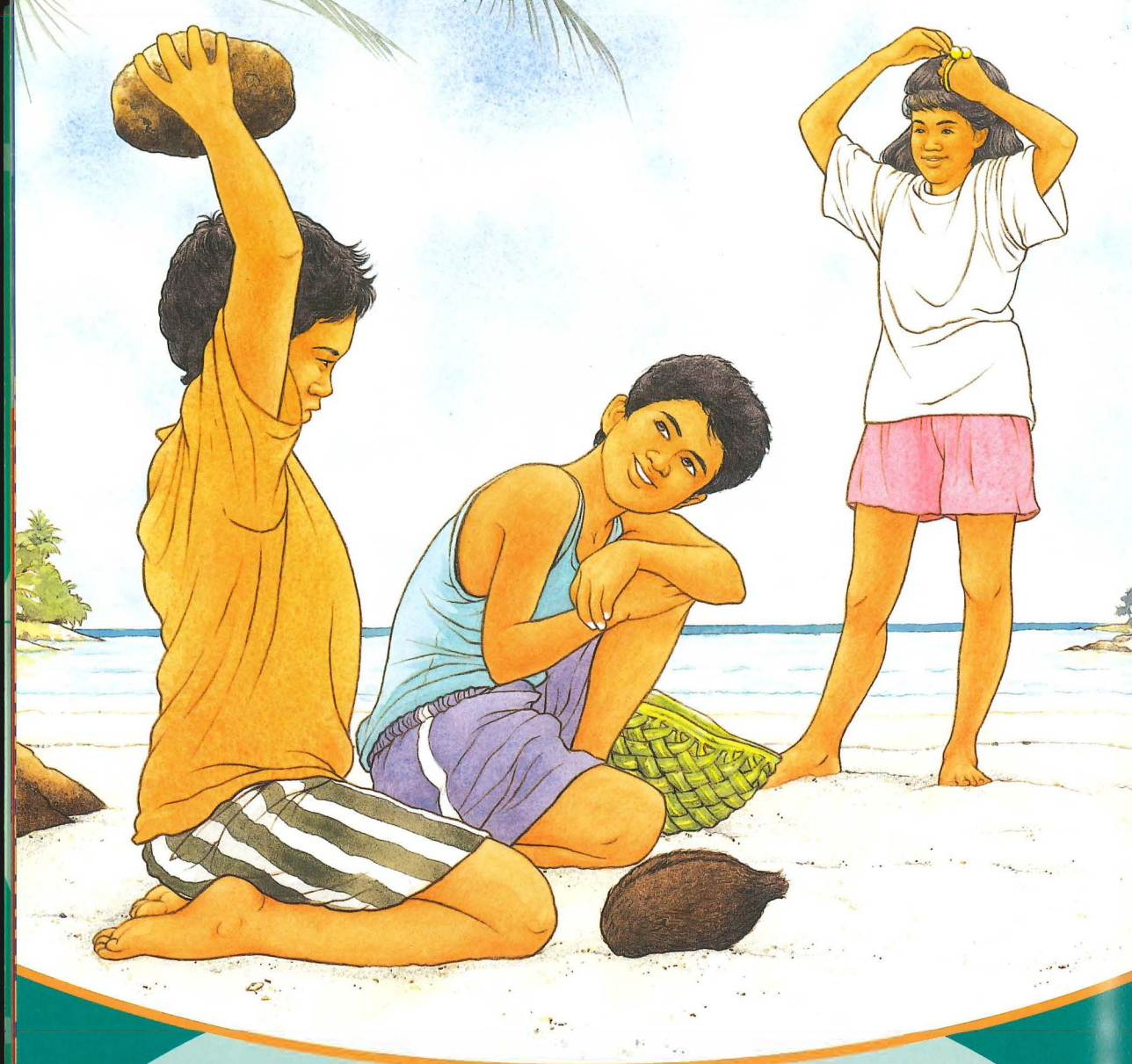
I te wā e pari ana te tai tata uhia ana te motu rā i te wai. He paku noa iho te whenua e kitea ana, me ētahi rākau kokonati, ētahi atu rākau ruarua nei. Engari ka timu ana te tai ka rahi ake te motu. Ka heke ana te tai ka kitea te maha o ngā toka. E haere ana a Karabe me ōna tungāne ki te kimi rangahua e pae ana i reira.

**TAI PARI**

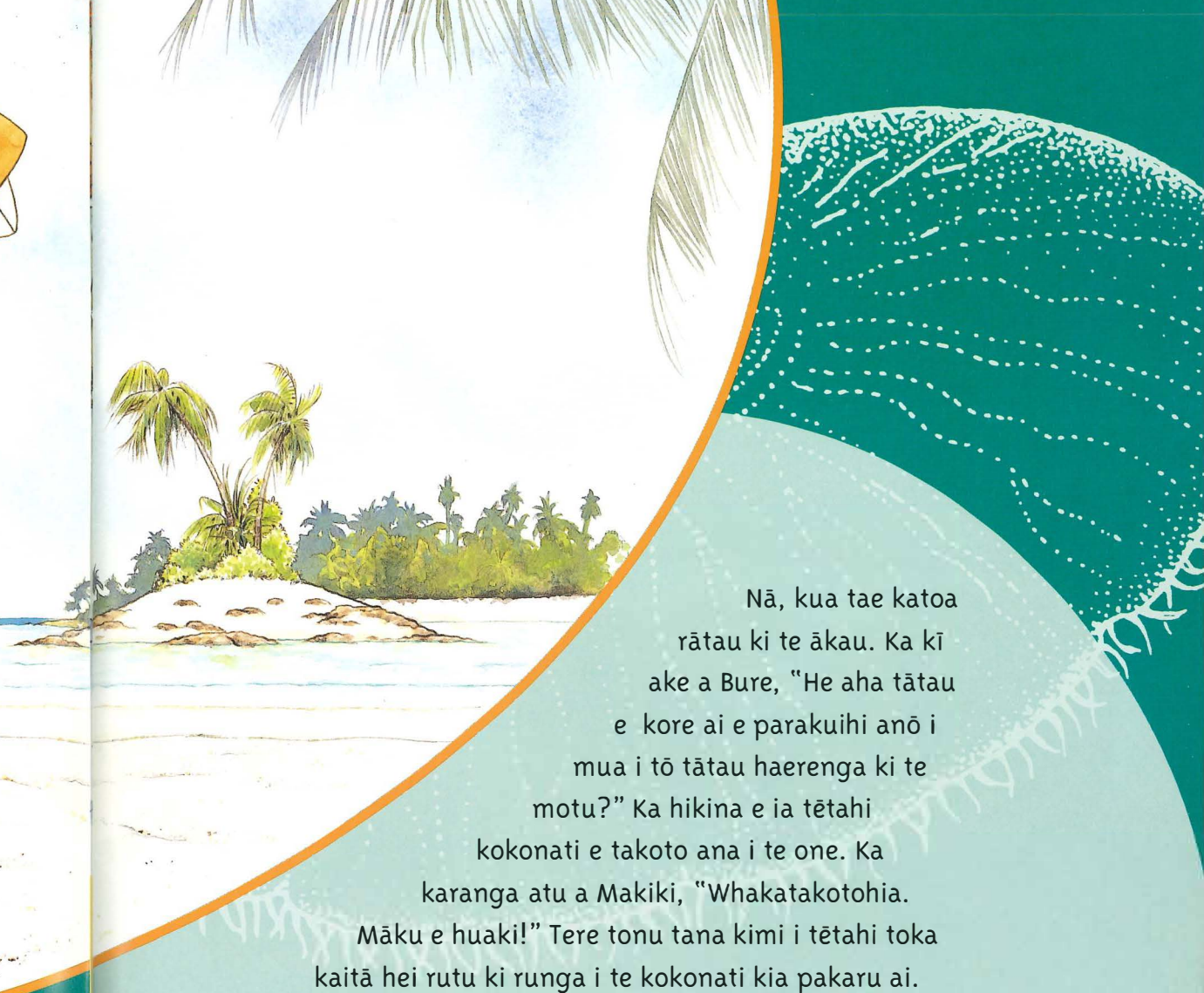
**TAI TIMU**







“Kia tere mai rā māngere mā.” Ka kata atu a Karabe ki ōna tūngane i a ia e whakamāenene ana i a rāua. “Me tae moata atu tātau ki te ākau. Mehemea ka tae atu tātau i te wā e timu ana te tai ka taea e tātau te kautū atu ki te motu. Kātahi ka taea e tātau te āta titiro haere i ngā puna wai, i ngā toka, ka hoki mai i mua i te tai pari.”



Nā, kua tae katoa rātau ki te ākau. Ka kī ake a Bure, “He aha tātau e kore ai e parakuihi anō i mua i tō tātau haerenga ki te motu?” Ka hikina e ia tētahi kokonati e takoto ana i te one. Ka karanga atu a Makiki, “Whakatakotohia. Māku e huaki!” Tere tonu tana kimi i tētahi toka kaitā hei rutu ki runga i te kokonati kia pakaru ai.

“Aue, kei te kī katoa i te kirikiri me te one.” Ko Makiki tērā e amuamu ana. “Kei te haere au ki te horoi i tāku.” He pai ki a Makiki te totetote o te wai moana. Engari ko Karabe, he pai kē atu ki a ia te wai i ngā wāhi e tere ana te awa ki te moana. Ahakoa he āhua totetote tonu te wai o reira, kāore e pērā te tote o te waitai. Ko Bure, kore rawa e pai ki a ia te wai tote. He rite tonu tana horoi i tana kokonati i roto i te wai māori o te awa.



Mutu ana tā rātau kai kinikini ka kautū ngā tamariki ki te motu. I reira ka tīmata tā rātau kimi i ngā tino rangahua kāore e timo ana. I a rātau e titiro ana ka tino timu rawa atu te tai. He maha kē atu ngā toka e kitea ana ka heke ana te wai. Rekareka ana rātau katoa i a rātau e kimi ana i ngā kararehe pai i ngā puna wai i ngā toka. He pāpaka paku, he koeke, he pātangaroa i ngā wāhi katoa. Ka wera haere ana te rā ka pāpaku haere ngā puna wai. Ka whakamārama atu a Karabe ko te Rā kei te whakamahana, kei te whakaeto i te wai.

Tae rawa ki te wā kua nui a rātau rangahua, kua maroke kē ētahi o ngā puna wai paku. "Haere mai ki te titiro ki tēnei!" Ko Bure tērā. Ka āta titiro atu ōna hoa ki ngā toka. E kapukapu mai ana ētahi kōataata pakupaku i roto i te rā.

Ka pātai atu a Makiki, "Ki tō whakaaro he aha ēnei?" I a rātau e whakaaro ana ka whātoro atu tana ringa ki tana pūkoro ki te tiki i tētahi maramara kokonati he mea tohu nāna, ā, ka horoia e ia i roto i te puna wai i toe mai i ngā toka. Ka karanga ake ia, "Aue! Te totetote hoki." Kātahi ka tuhaina e ia te kokonati. "He kōataata tote!" Kotahi tonu te whakahuatanga a Makiki rāua ko Karabe. "Āe mārīka! Koinā tonu ngā mea mā rā."

Tere tonu te hokinga o ngā tamariki nei ki te kāinga ki te korero me ō rātau mātua mō te mea hou kua kitea nei e rātau. Muri mai i ngā hararei ka āhei rātau ki te kōrero atu ki tō rātau kaiwhakaako me ō rātau hoa i te kura. Ka kī ake a Bure, "Kei te rikarika katoa au kia tīmata anō te kura!" Kātahi ka noho ia ka titiro atu ki a Karabe rāua ko Makiki e tūmeke ana ki āna kōrero. Kātahi ka huri tana reo, "Ā ... tērā pea."

nā Elspeth Alix Batt  
ngā pikitia



# Te Hanga

# Tōhihi

nā Sue Averill me Room 7,  
Westshore School, Napier

**E ako ana mātau i te huarere.** I tētahi rangi ka kōrero ake a Mrs Averill mō te huringa wai. I te timatatanga, kāore mātau e mōhio he aha tēnei.

Ka pātai atu a Melanie, me tana kata anō, “He mea tēnei e piki ana ngā ika ki runga hei haere ki te kura?” Hemo katoa mātau i te kata. Engari kāore tonu mātau i mōhio he aha te whakautu tika.

Ka āwhinatia mātau e Mrs Averill, “Ko ngā huringa nei, e huri porohita ana, huri atu, huri mai. Nā, ko te huringa wai he mea tēnei e pā ana ki te huarere. Kua mārāma? Ka taea anō e tētahi o koutou te whakamārama mai i te āhua o te huri porohita o te wai i roto i te huarere?”

Kāore tonu mātau i te tino mōhio. Ka kī ake a Tame, “Heke ana te ua i te wā e kino ana te huarere, engari kāore e piki ake ana anō, nē? Nā rā, ko wai kua rongu, e ua whakarunga ana?”

Kātahi ka whai whakaaro ake a Rima, “Pēwhea te mamaoa? He wai te mamaoa, ā, ka piki whakarunga ake ka hū ana te tikerā. Ko te kōrero a Māmā he whakaetotanga tēnā.” Ka whakaaro ake mātau, āe, e whai kiko ana te whakaaro a Rima.

Ka ui atu a Mrs Averill, “Nā, ka mutu ana te ua, he aha te mea kei te whakamahana i ngā tōhihi kia whakaeto ai?”

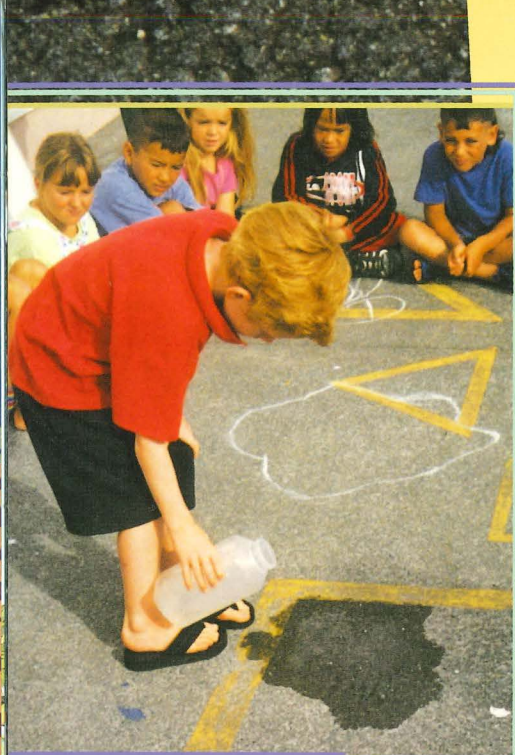
Kotahi tonu tā mātau ūmere atu, “Te Rā!” E tino mōhio ana mātau he tika tā mātau whakarite i te āhua o te mahi a te huringa wai. Ka mutu ana te ua ka noho te wai ki runga i te whenua mō tētahi wā. I te mutunga ka whakamahanatia te wai e te Rā, ā, ka whakaetohia ki te rangi. I runga rā ka waihanga kapua te wai - pērā tonu i te mamaoa e puta ake ana i te tikerā a te māmā o Rima. Nā, ka haere te wā, ka ua anō.

Ka whakaeto te haukū i te whenua me te wai.

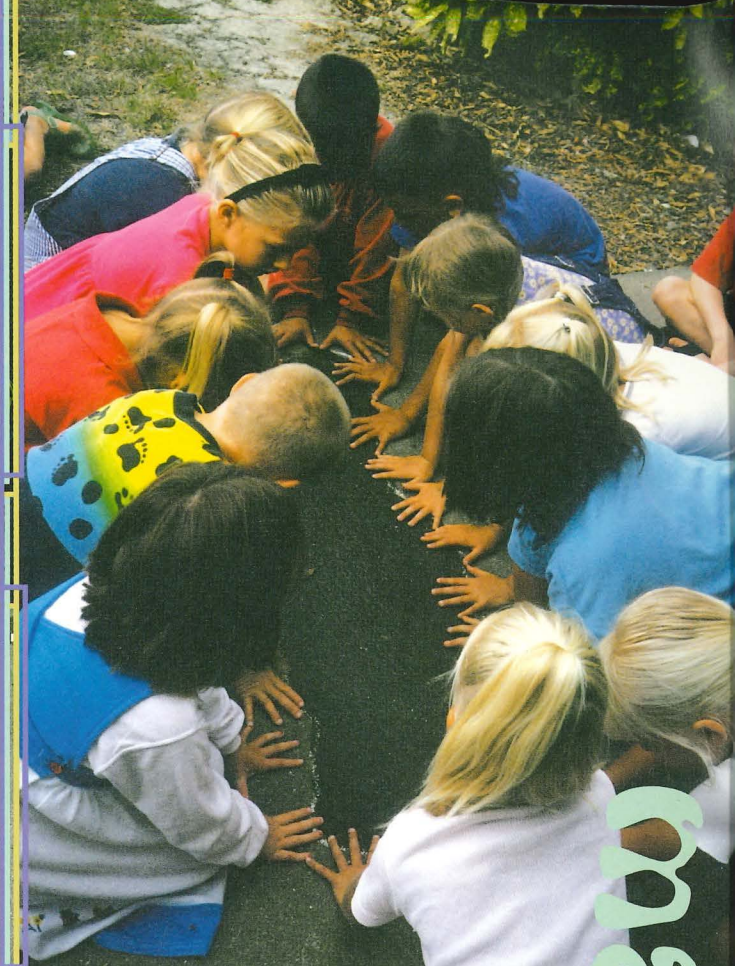
Ka waihanga kapua te haukū kei te rangi.

Ka heke iho te ua ki te whenua me te wai.





Kua tae ki te wā hei whakamātau i ō mātau whakaaro. Hei kimi i te hiranga o te Rā i roto i te huringa wai, i hangaia e mātau ētahi tōhihi e rua; kotahi i te wāhi marumaru, tētahi i te wāhi e whitikia ana e te rā. E rua ngā take e hiahia ana mātau ki te mōhio. Tuatahi, ka whakaeto anō ngā tōhihi e rua nei? Tuarua, ka tere kē atu te whakaeto o te mea kei roto i te rā i te mea kei te wāhi marumaru? I whakaaro te nuinga o mātau ka pērā te āhua. I mōhio mātau mai i ā mātau tākaro hopscotch i ngā rā mātao, he kapua kei te rangi, ka roa te takoto o ngā tōhihi.



I hangā e Mitchell tētahi tōhihi i runga i te papa raima i mua i te rūma akomanga, he wāhi kanapa, ā, he wāhi e whitikia ana e te rā. He mea hanga e Holly tētahi atu i runga i te raima i muri i te rūma akomanga, he wāhi hauangi, he wāhi marumaru.

I rohea e Luke ki ngā tōhihi mā te tioka kia kite ai mātau he aha te wai i whakaetotia i te wā i whakaritea ai e mātau. He maha ngā āhuatanga i kōrerotia e mātau hei ine i ngā tōhihi. I te mutunga nā ō mātau ringa tonu i ine ngā tōhihi. Tekau mā toru ngā ringa i karapoti i te tōhihi e whitikia ana e te rā.

rā





Ia tekau meneti ka tirohia e mātau ngā tōhihi, ka tuhi he raina hou hei karapoti i ngā tōhihi hei whakaatu i te wai kua whakaetotia ia wā. I ngaro katoa te tōhihi e whitikia ana e te rā i muri iho i te whā tekau mā rima meneti. Pau katoa ngā haora o te ata i a mātau e tatari ana mō te mea i roto i te wāhi marumarū. Hāunga rā, i te mutunga i ngaro katoa ngā wai o tērā.

I muri iho i tuhia e tēnā, e tēnā o mātau tā mātau whakamātautau. Kātahi ka tino kōrerohia e mātau te kaupapa nei. I kōrero mātau mō ngā hua i puta me ō mātau whakaaro mō ngā mea i ākona e mātau i te whakamātautau.

I noho a Hera i Te Whanganui ā Tara. Ka whakaaro ake ia mō te wāhi kei te hau i roto i te whakaetotanga.

I kōrero a Jason mō tana hararei i Te Waipounamu. I haere tana whānau ki te roto o Grassmere. Koirā te wāhi e tukuna ana kia whakaetotia ngā wai tai o te roto. Ka pau ana ngā wai ka toe mai ko te tote. Kohikohia ai e ngā tāngata te tote hei hoko.

Ka maumahara ake a Temanori ki ngā kōrero a ōna mātua. I te wā e tamariki ana rāua i noho rāua i Kiribati, he moutere paku i Te Moananui ā Kiwa. Ka haere rāua ki te tiki kai ka kitea rāua ētahi kōataata tote i roto i ngā puna wai kua maroke, ka timu ana te tai.

Kātahi mātau ka whakaaro ake kāore anō kia mutu tā mātau whakamātautau. He maha tonu ngā pātai hei hōpara mā mātau. Kua tīmata kē mātau ki te whakaaro mō te maha noa atu o ngā momo whakamātautau hei whakahaere mā mātau.

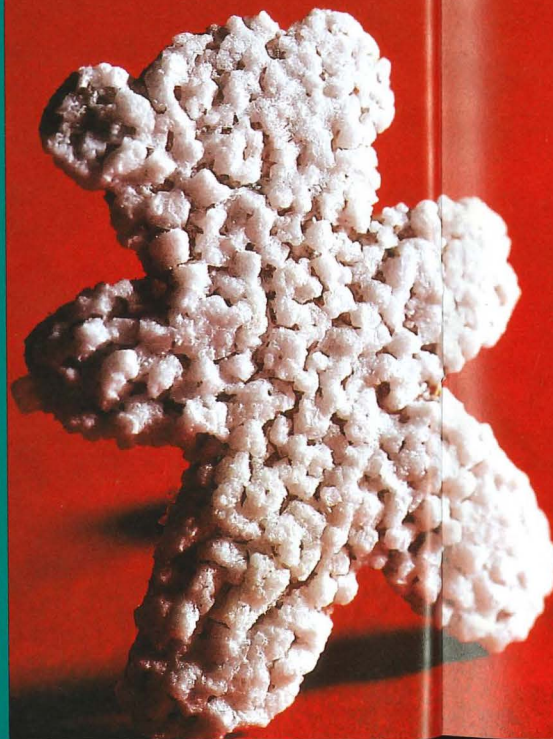
# Hurunga Wai



# Whakatipua āu ake KŌATAATA

nā Julie Ellis ♦ nā Adrian Heke ngā whakaahua

Ka rongo ana koe i te kupu “kōataata”, he aha te mea ka whakaaro ake koe? Ngā porotoru ātaahua e tīahoaho ana i te rūma? Ētahi taonga karāhe he nui te utu? Ētahi taimana? Kei te hiahia au ki te tohutohu i a koe ki te āhua o te hanga taimana - engari kāore e taea e au. Otirā, he ngāwari noa iho ki a koe te hanga i ngā momo kōataata. He mea pai ki te hanga kōataata i te wā tuatahi i te mea kāore koe e mōhio ka pēhea te āhua o ngā tauira ka hangā e ngā kōataata. Ka mutu ana ētahi whakamātautau ruarua nei ka taea e koe te raparapa ka pēhea te āhua o ō kōataata. I pēnei ai nā te mea mō ia matū, he rite tonu te āhua o ngā kōatata ka puta i ngā wā katoa.





# Hei Whakaarotanga

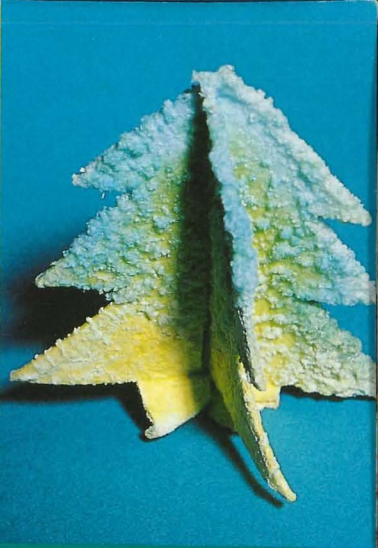
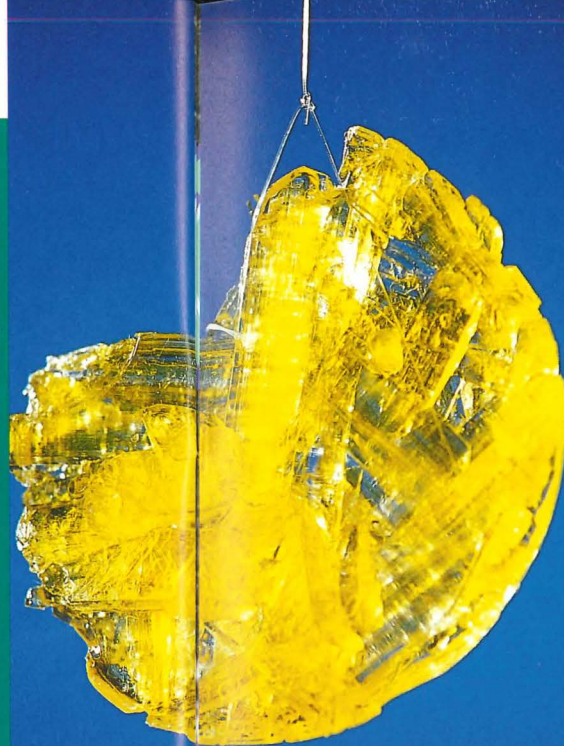
*I mua i to whakatipu kōataata, e whā ngā pātai hei whakautu māhau.*

1. He aha ngā momo pata kōataata e mea ana koe ki te rewā? Whakamahia ētahi o ēnei: he tote, he huka, he tote Epsom - he tote wai moana, he tote kaukau, he wai pupū horoi kākahu, he pākawa kura pungawera (pōhatu kahurangi) rānei

2. He aha te tumu hei whakatipu i ō kōataata? Me whakamahi ētahi o ēnei: he karāhe, he rākau, he waro, he papanga, he rīpene, he uhi kirihou, he rārā, he pōhatu, he tāhoata, he pereti, he anga hēki, he pepa waru, he pepa ngongo waituhi rānei me tapahi ki tētahi āhua pai.

3. He aha te kano e tino pīrangi ana koe? He kahurangi te pākawa kura pungawera, engari ko te nuinga o ētahi atu ka hanga kōataata mā - hāunga anō ngā mea kua pokea ki te kano kai.

4. Ka pēhea tō whakaatu i ō kōataata? Mehemea kei runga pereti, kei roto pouaka rānei, tērā kāore e tūkinotia. Ka oti ana tō whakarite i ēnei mea kua reri koe ki te tīmata.



## Me Pēhea?

Hei whakatipu i ō kōataata, tīkina atu he pakeke hei āwhina i a koe ki te rewā i te maha noa atu o ngā pata i roto wai wera (Kauaka e waiho māu e rewā - kei wera koe!) Mehemea e hiahia ana koe kia whai kano ō kōataata, tāpirihia ētahi kōpata o te kano kai ki te wai. Tāhorotia he paku wē ki runga ki te tumu i whiriwhiria e koe hei whakatipu i ō kōataata. Waihotia te tumu ki tētahi wāhi mahana pērā i te whata matapihi. Whakaputua te wē ki roto ki tētahi kapu i tētahi wāhi mātao, wāhi pouri.

Me kōrorirori te wē ia rangi, ka whakamahi i tētahi kōrere whatu, tētahi tīpūnu rānei hei kōpata wē ki te tumu kōataata. Ka whakaeto ana te wē ka tīmata ngā kōataata ki te tipu. He rerekē te tere o te tipu o ngā momo pata kōataata. He toru wiki mō te huka. Mō te tote Epsom, he toru rangi te wā.

Ka tipu ana ō kōataata, whakatakotohia i tētahi wāhi he ngāwari ki te whakaatu ki ō hoa.







# Te *Tipua* e Pīrangi Moenga *Ana*

nā Chris Brough

E rongō ana ngā tāngata paku i te haruru nui e ahu mai ana i ngā hiwi. E mōhio ana rātau ko te puku o te tipua tērā. Ka tino haruru ana, kotahi anake te take, kei te matekai te tipua rā.

Tere tonu te omaoma haere o ngā tāngata paku ki te wharekai i te moka tawhiti o te kāinga. Ākuanei, ka tae atu te tipua ki reira. Me tere oti i a rātau te whakatikatika i tana parakuihi! He rite tonu te āhua o te tipua rā ka tae ana ia ki te kāinga, he nenge, he matekai. Ko tana rahi e rite ana ki te tokowhā o ngā tāngata paku, nō reira e eke ana ki te whā o ngā kai me ngā unu mō ia tangata paku, ngā kai me ngā unu māna

Ka uru atu ana te tipua rā ki te kāinga, rū ana ngā whare i tana takahi kotahi, i a ia e haerere ana. Pohū, pohū, pohū! Ka pātōtōtia e te tipua te tatau o te wharekai. Aue! Kātahi anō ka oti i ngā tāngata paku te tunu kai. Ka tūwhera te tatau, ka titiro ake rātau ki te tipua inati rā.

Kātahi ka memene atu te tipua rā. Kua mahia e ngā tāngata paku he unu māna. Kua oti i a rātau te tāhoro wairēmana ki roto ki tētahi pākete e eke ana ki te whā tōna whānuitanga me tōna teiteitanga ki te karāhe. E mōhio ana hoki rātau mehemea ka unuhia e te tipua rā mā tētahi tākakau noa iho, kāti, ka pau katoa te rangi i a ia e unu ana. Nō reira, hāunga ake te tākakau, he mea tapahi nā rātau tētahi ngongo wai ki te roanga e tika ana. Kua oti kē i a rātau te whakarite ko te roanga pai mō te tākakau rā, arā, me noho tuarua tōna teiteitanga ki tērā o te kapu. He 25 hēnimita te teiteitanga o te pākete, nō reira he tino pai rawa atu te ngongo wai he 50 hēnimita te roa.







Nā kua tae ki te wā mō te hupa. Hāunga ake te kumete hupa, he mea whakakī e te tūmau tētahi kumete nui rawa mō te poke keke ki te hupa hua whenua. Kāore noa iho he take o te pune noa mō te tipua rā. Nō reira i tīkina e Stu, te tūmau, te koutu hupa tino rahi i kitea e ia i te kītini.

Ka kī ake te tipua, “He pai tonu te hupa, engari kei hea te pīkaokao ātaahua he tohunga rā koe ki te tunu?” Taro ake kua puta a Stu ki te tatau o te kītini tū whakahihī ai me tana korukoru, mutunga kē mai o te ātaahua i rō kono kaitā. Hāunga ake he naihi me te paoka māna, i mauria atu he paoka māra me tētahi hāwhe kutikuti heti hei naihi mā te tipua.

I te nuinga o te wā kua kī te puku o te tipua i muri iho i te kai nui pēnei i tēnei. Engari i te rangi nei i te tino matekai ia. “Āaa! Ko taku hiahia ināiane he āporo mākūkū hei whakaoti atu!” Tūmeke ana a Stu, engari he whakaaro mūrere tonu tāna. Tere tonu tana hoki atu ki te wharekai ka puta ake me tētahi merengi nunui. “E tino harikoa ana mātau ki te āporo hou nei, he āporo nā mātau i whakatipu - kāore he uho!” Me tana taiatea anō. Ngaro atu ana te “āporo” me tā rātau rongo anō hoki i te tipua rā e ngaungau, e mitimiti ana i ōna ngutu. Kātahi anō, ka kī te puku.



Tino pīrangi te tipua nei kia roa rawa tana noho ki te kāinga nei. Ehara i te mea ko te kai anake i pēnei ai ia, engari he rawe anō ki a ia te kōrero tahi me te iwi nei, me te tākarō me ngā tamariki.

Ka tō ana te rā ka mea te tipua rā ki te hoki i te huarahi ki tana kāinga kei tawhiti. Ahakoa tana tino pīrangi kia noho tonu, kāore he moenga he rahi rawa mōna. Aroha ana te iwi pakupaku rā ki a ia e ngaro atu ana i te huarahi. Ka mahue mai ana tapuwae kaitā i te oneone. Kātahi a Tipi Rākau, te tama a te kāmura, ka kī ake, “He whakaaro tino pai tāku. Mā tātau e hanga moenga mō te tipua.”

Ka kī atu te Mea o te kāinga, “Kātahi te whakaaro whakahirahira ko tēnā! Heoi anō, kia nui rawa te utu me whakapiki ngā tāke! Otirā, kauaka tātau e hanga kia paku rawa. Kei amuamu te tipua.”

Ka karanga ake a Tere Tatau, “Kei a au!” Ko ia te tamāhine a te kaiwhakaako pāngarau. “E raparapa ana tātau i te rahi o ngā kai hei kainga mā te tipua. Engari ki taku whakaaro ka taea e au te whakamahi ōna tapuwae hei tohu me pēhea te rahi o te moenga.” Ka whātoro atu ia ki tana pūkoro mō te tēpa ine.



“Āaa, he 50 henimita te roa o tēnei tapuwae. Ka taea e au te whakamahi i tēnei ine hei tohu i te rahi o te moenga - kia kore ai e tino rahi, e tino paku rawa rānei.”

I te hokinga mai anō o te tipua, tino harikoa ana ia. He tino hāneanea, he tino hāngai te rahi o te moenga ki tana hiahia. I taua pō i mua i te katinga o ōna whatu kia moe, ka takoto ia i te moenga whakaaro ai ki te mātauranga o ōna hoa ki te āta tātai kia tika, kia hāngai tonu te rahi o te moenga mōna.

nā Philip Webb ngā pikitia





# Te Take mō te Tipuna Tekau mā Toru Tau te Pakeke

NĀ DOT MEHARRY ME ROOM 4, TURUA SCHOOL

Ko Mrs Meharry te ingoa o tō mātau kaiwhakaako. He rerekē a Mrs Meharry, i te mea i kī mai ia ki a mātau, “Tekau mā toru tau noa iho taku pakeke - ā, he mokopuna āku! Tēnā, whiriwhiria mai e koutou tēnei hanga?”

Kāore mātau i pīrangi ki te whakaiti i a ia, engari, i kī atu mātau “Ehara tāu rite i te kōtiro tekau mā toru te pakeke!” Ka kata a Mrs Meharry, ka tīmata te whakamārama. I whānau mai ia i te 29 o ngā rā o Pēpuere 1948. Kātahi ka whakaarohia e mātau te tikanga o tāna kōrero.



Ko tōna tikanga, 28 ngā rangi o Pēpuere, engari ia whā tau, 29 kē ngā rā o taua marama. E karangatia ana tēnei momo tau, he tau peke. Nō reira, mehemea i whānau mai koe i te 29 o ngā rā o Pēpuere, kotahi anake to rā huri tau ia whā tau. I whānau mai a Mrs Meharry i te tau 1948, engari kāore i whakahaeretia te huri tau mōna kia tae rawa ki te tau 1952. I ngā tau e whā i muri mai, i 1956 tana huri tau tuarua.

“I te wā he kōtiro au e noho ana i runga pāmu, ko au anake te pēpi tau peke i taua wāhi. Ia tau i whakanuia e mātau taku huri tau i te 1 o ngā rā o Maehe.

He tau tino whakahirahira ki ahau te tau peke. I te wā o taku huri tau tūturu i whiwhi koha au i te katoa. Engari i mutu tēnei mahi i taku haerenga ki te kāreti. I whakaaro rātau kua pakeke rawa au - engari kāore au i whakaaro pērā.”

He iti noa iho ngā wā e whiwhi huri tau tūturu ana a Mrs Meharry. I te tau 2000 tana huri tau tekau mā toru. Tae rawa ki te wā ka whiwhi ia i tana huri tau rua tekau mā tahi, kua noho mārena kē ia mō ētahi ono tekau tau! I mārena ia i te wā e ono tau noa iho tana pakeke.



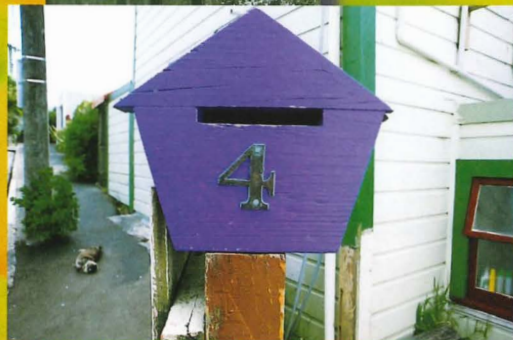
Inanahi, i meatia e Mrs Meharry kia whakaritea e mātau tana pakeke a te tau 2020. “Nā, koia ka tika tāna whakarite, kāore he mahi māna ki te kāinga a te pō nei!” Ka taea anō e koe te tātai? E hia ngā huri tau ka whiwhi a Mrs Meharry a te tau 2020 mehemea i whānau ia i te tau 1948?

E mōhio ana koe ki tētahi tangata i whānau i te 29 o ngā rā o Pēpuere, ā, e karangahia ana he pēpi tau peke?



# He Nama, He Nama, Kei Ngā Wāhi Katoa

*nā K. E. Anderson  
nā Adrian Heke ngā whakaahua*



Whakamahī nama ai te  
nuinga o ngā tāngata ia  
rā. ■ te mea he rite tonu  
tā tātav whakamahī nama,  
kāore noa iho tātav e  
tino mōhio ana ki tō  
tātav whirinaki ki ngā  
nama nei.

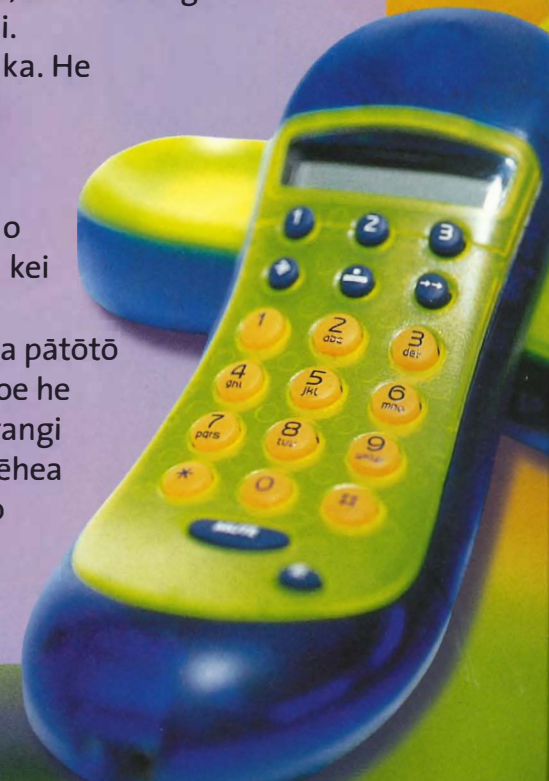
He nama tō te whare i roto i tana  
rārangi kāinga noho. Whakaatu  
ana te nama i te whare tika,  
mehemea kei te kimihia i te tiriti.  
He ngāwari tēnei mō te kaikawe  
reta e toha reta ana ki ia whare.  
Mēna kāore ake, kāti he mahi  
uaua te mahi nei. Me kore ake he  
nama tērā ka noho pēnei te  
kōrero: “Kei te Tiriti o Aka, te  
whare kahurangi, e rua ōna papa,  
kei waenganui i te tiriti i te ringa  
maui, he rākau nunui kei te māra,  
ā, he kanukanu nei te taiapa.”



Ko ngā whare pukapuka ngā wāhi nui ai te  
pukapuka. He nama tō ia pukapuka pakiwaitara  
hei whakaatu i tōna wāhi i te whata, pērā i te  
kāinga noho. E āhua rite ana ngā nama o ngā  
pukapuka mō te take kotahi. Nā, ko te tikanga ka  
whakatakotohia ki te wāhi kotahi.

He nama anō kei roto i ngā pukapuka. He  
nama tō ngā whārangi. He maha ngā  
pukapuka he rārangi ihirangi ō rātau.  
Tirohia te whārangi tuatahi o tēnei  
Tūhono. I reira ka kitea e koe te nama o  
te whārangi o ia kōrero me te tuinga kei  
roto i te pukapuka.

He nama anō kei runga i ngā waea. Ka pātōtō  
ana koe i te raupapa tataua, ka tonoa e koe he  
karere ki tētahi rorohiko nunui. Ko te rārangi  
nama nei kei te kī atu ki te rorohiko ko tēhea  
waea te mea e hiahia ana koe ki te hono  
atu. Ka āhei koe ki te kōrero - engari koa  
kua tuhia e koe he nama hē!







4  
ghi

He nama anō kei ngā karaka me ngā wati. Koinei te mea kei te āwhina i a tātau ki te whakarite i te wā mō ā tātau mahi me ā tātau hui, ā, kia mōhio hoki tātau ki te wā hei whakakā i te pouaka whakaata, kia kite ai tātau i ngā kaupapa e tino pai ana ki a tātau. E rua ngā momo karaka. He nama a tētahi kei te porohita, he ringaringa kei waenganui mō ngā haora me ngā meneti. Ko tētahi atu, he nama anake tāna.

He nama kei ngā wāhi katoa. He pai rawa ngā nama hei whakaatu mea me te whakarite i aua mea. E hia ngā nama ka kitea e koe i roto i te rūma i nāiane?



## He mihi

Kei te mihi Te Pou Taki Kōrero ki a Rosemary Hipkins, rātou ko Ally Bull, ko Lorraine McKay, me Te Whānau Akopai, mō te arotake i tēnei pukapuka me Ngā Tuhinga mā te Kaiwhakaako mō tēnei whakaputanga o Tūhono. Kei te mihi anō hoki ki a Vodaphone o Dukes Arcade ki Poneke, mō te waea i whakaahuatia i ngā whārangi 1 me 31, me Capital Watch Services o Willis Street ki Poneke, mō te wati me te karaka i whakaahuatia i whārangi 32.

Nā Thomas Bewick te whakaahua o te Rā e whāriki ana i ngā whārangi 4-6; nā Vivian Ward te whakaahua o te rangahua e whāriki ana i ngā whārangi 7-11; nā Sue Averill ngā whakaahua o runga i ngā whārangi 12-17, hāunga anō te whakaahua e whāriki ana i aua whārangi, nā Meredith Biberstein tērā; nā Fraser Williamson ngā pikitia i ngā whārangi 12-13 me 28-29; nā Meredith Biberstein te whakaahua e whāriki ana i ngā whārangi 28-29.

Ētita: Pāora Tibble

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Mana pupuri ki ngā pikitia me ngā whakaahua kei ngā whārangi e whai ake nei: ko te whakaahua nā Thomas Bewick kei te iwi te mana; 4-6, mana pupuri © Maureen Goodwin 2000 ki ngā whakaahua; 12-17, mana pupuri © Sue Averill 2000 ki ngā whakaahua; 7-11, mana pupuri © Mike Bradstock 1985 ki te pikitia o te rangahua nā Vivian Ward i tā; mana pupuri © Te Karauna 2000 ki ngā pikitia kei te toe.