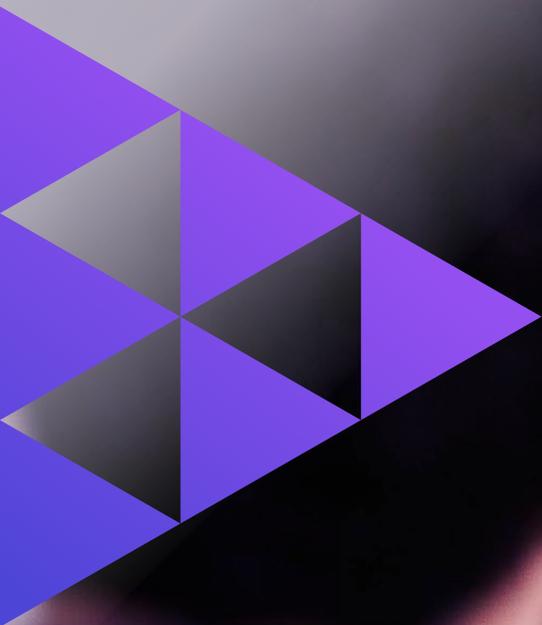


Te whai hua - kia ora

sorted
in schools



Te Tātai Ahumoni!

Te Aratohu Kaiako

TAU
8-10

Pāngarau

Te Tātai Ahumoni: Mā te Kaiako

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Introduction

This resource collates activities from Te Whai Hua – Kia Ora! that support the teaching and learning of Pāngarau concepts at Tūārere 3 and Tūārere 4 of Te Marautanga o Aotearoa.

Designed for use with mokopuna in years 9–10, the activities help mokopuna to build strong financial literacy skills and to apply pāngarau concepts in real-life financial contexts.

By working through the topics in this resource, mokopuna will gain a clear understanding of how money works – how we earn it, save it, spend it, and plan for the future.

The ākonga booklet covers six financial literacy topics:

- Te Kaupapa 1: Budgeting and Paying Bills
- Te Kaupapa 2: Payslips and Tax
- Te Kaupapa 3: Running Your Own Business
- Te Kaupapa 4: Loans
- Te Kaupapa 5: Retirement
- Te Kaupapa 6: Government Spending

The following table presents an outline of the specific pāngarau and financial literacy concepts that are included in each topic.



Topic	Pāngarau concepts	Financial literacy concepts	# Activities
1 Budgeting and Paying Bills	<ul style="list-style-type: none"> • Addition and subtraction of whole numbers • Find a fraction or percentage of a number • Ratios 	<ul style="list-style-type: none"> • Household budgets • Paying bills • Sharing expenses • Saving 	4
2 Payslips and Tax	<ul style="list-style-type: none"> • Multiplication and division of whole numbers • Expressing a number as a percentage • Rates and ratios • Analysis of basic line graph 	<ul style="list-style-type: none"> • Understanding payslips • Salary vs. wages • Part-time jobs • Understanding and paying Tax • Paying GST 	10
3 Running Your Own Business	<ul style="list-style-type: none"> • Multiplication and division of whole numbers • Expressing a number as a percentage • Rates and ratios • Patterns and relationships • Calculating metric units • Analysis of basic line graph • Theoretical probability 	<ul style="list-style-type: none"> • Reviewing your business • Analysing profits • Business expenses • Business claims • Charging GST 	9
4 Loans	<ul style="list-style-type: none"> • Multiplication and division of whole numbers • Addition and subtraction of whole numbers • Addition and subtraction of rational numbers • Scale and scale factors • Conversions and calculating metric units 	<ul style="list-style-type: none"> • Student loans • Interest on loans • Mortgages 	9
5 Retirement	<ul style="list-style-type: none"> • Multiplication and division of whole numbers 	<ul style="list-style-type: none"> • Saving for retirement 	1
6 Government Spending	<ul style="list-style-type: none"> • Multiplication and division of whole numbers • Addition and subtraction of whole numbers • Finding the percentage of a number 	<ul style="list-style-type: none"> • Local council spending 	1

Using this booklet

Topics and activities in this resource can be completed in any order. Depending on prior knowledge of the financial literacy and pāngarau concepts, mokopuna could undertake the activities in pairs, small groups or as part of guided instruction.

There will be new financial and pāngarau terms used within the booklet. Please take the time to scaffold their learning with tasks that support their vocabulary development.

The activities included in this resource have been selected from a range of existing materials in Te Ara Ahunga Ora (Retirement Commission)'s Te Whai Hua – Kia Ora! programme. For broader context and explanations of the financial concepts, please refer to the original activities available at [Te Whai Hua - Kia Ora! | Sorted in Schools website](https://www.sortedinschools.org.nz/mme).

A glossary can be found at the end of the student booklet.

Providing mokopuna with pāngarau materials such as place value blocks and fractions strips and allowing them to represent their thinking visually are excellent strategies to help mokopuna process and conceptualise their thinking.

Answers to the activities in the ākonga booklet can be found in the relevant section below.



Supporting material

A range of engaging resources designed to support the teaching of the concepts covered in this module are available through Te Whai Hua – Kia Ora! | Sorted in Schools website.



Resource	Explanation
<u>Kete Timatanga Sorted in Schools Te Whai Hua - Kia Ora!</u>	If you have already begun using this resource or its activities, and some parts are proving difficult for the mokopuna, it may be best to complete the Kete Timatanga first.
<u>Kaihoko Hokomaha Sorted in Schools Te Whai Hua - Kia Ora!</u>	In this digital resource, students will learn about budgeting and the differences between needs and wants in an everyday context.
<u>He Mahere Pāti Sorted in Schools Te Whai Hua - Kia Ora!</u>	In this activity, a project is chosen and planned that the friends will enjoy, while the student manages their budget.
<u>Ngā Rauemi Tāke</u>	These taxation modules provide young people with the opportunity to learn about the tax system in Aotearoa (New Zealand) including, why we are taxed, and how tax applies to individuals and businesses. These modules have been designed for ākonga at Tūārere 3 and 4 (Years 7 to 10).

Dispositions (Ngā Toi Mokopuna)

Toi Mokopuna are a cornerstone of Te Marautanga o Aotearoa.

They embody the aspirations of whānau, hapū, and iwi for mokopuna to be capable communicators, competent learners, resilient and healthy people, and confident in their identity. All learning through Te Marautanga o Aotearoa is expected to contribute to these outcomes. Each activity in the student booklet relates in some way to the Toi Mokopuna.

By building financial capability and embedding key mathematical concepts, mokopuna will further strengthen their skills as lifelong learners – people who are eager to grow their knowledge and, ultimately, who can manage themselves and their money confidently.

The following table outlines the Toi Mokopuna from the Pāngarau wāhanga ako.

Key Pillars of Te Marautanga o Aotearoa	Pāngarau Dispositions	Explanation
He puna kōrero te mokopuna	He puna kōrero i te reo pāngarau	He kaha te mokopuna ki te whakapuaki i ōna whakaaro, ki te whakanui hoki.
He tangata te mokopuna	He tangata tūhura i te taiao	Kua pākiki te hinengaro o te mokopuna, kua auaha hoki tōna wairua.
He uri whakaheke te mokopuna	He uri whakaheke ki te whaiao	Kua manawa tina, kua whai hononga hoki te mokopuna.
He ākongā te mokopuna	He ākongā mauri oho	Kua hihiko te ngākau o te mokopuna, kua anga whakamua hoki ōna whakaaro.

Supporting Pāngarau learning

This resource has been designed to contribute meaningfully to a wider pāngarau programme.

Mokopuna will use pāngarau concepts and knowledge from Tūārere 3 and Tūārere 4 of the Pāngarau wāhanga ako to solve a range of problems. Learning draws on specific concepts from Te Tātai (Quantification), with additional links to Te Taurangi me te Āhuahanga (Algebra and Geometry), Te Tauanga me te Tūponotanga (Statistics and Probability), and Te Ine (Measurement).

The activities support mokopuna to make authentic connections between their pāngarau knowledge and financial literacy. It helps them apply their understanding of pāngarau to real-life financial situations, showing how pāngarau is relevant and useful beyond the classroom.

Additional resources that support and further consolidate foundational concepts in pāngarau, particularly within the strand of Te Tātai, include the following:

- **Tiheī Pāngarau - Te Tau me te Taurangi:** Ngā Tūārere 2 – 3
- **Hei Tautoko i te Marautanga Pāngarau - Te Poutama Tau:** Pukapuka Tuawhā ki te Pukapuka Tuawaru
- **Poutama Pāngarau:** Ngā Tūārere 2 – 3
- **Taku Whare Pāngarau:** Ngā Tau 7 – 8

Additional financial literacy concepts can also be found within Te Ao Māori wāhanga ako.

Pāngarau knowledges

This resource draws upon three key knowledge areas from the Pāngarau wāhanga ako:

- Te Hanga me te Paheko o te Tau Whakahau
- Te Whakareatanga me te Whakawehenga o ngā Tauoti
- Te Whakaahua me te Whakamāori Tūponotanga.

In particular, the activities support mokopuna to demonstrate their knowledge of the following Year 8, 9 and 10 pāngarau concepts:



Knowledge: Te Hanga me te Paheko o te Tau Whakahau

Ka whakaatu te mokopuna i tōna mōhio:

Te Tau 8

- ki te huri i ngā hanga tau whakahau e ōrite ana (h.t. $\frac{3}{4}$ $0.75 = 75\%$)
- ki te whakaoti rapanga mā te whakamahi i te ōwehenga me te riterite
- ki te whakarea i ngā tau ā-ira tōruna (h.t. 2.3×45 me te 2.3×4.5 e hāngai ana ki te whiriwhiringa o te 23×45).

Te Tau 9

- ki te tautohu, ki te pānui, ki te tuhi, ki te whakaahua, ki te whakatairite, ki te whakaraupapa, ki te huri hoki i ngā hautau, i ngā tau ā-ira, me ngā ōrau
- ki te whiriwhiri i te hautau, i te ōrau rānei o tētahi tau
- ki te whakapuaki i tētahi tau hei hautau, hei ōrau rānei mō tētahi atu tau
- ki te tuhi, ki te whakatairite, ki te whakaraupapa hoki i ngā tauoti me ngā tau ā ira, mā te whakamahi i te tānga ngahuru, hei tauira: 3.14×10^3
- ki te whiriwhiri i ngā ōwehenga ōrite me ngā pāpātanga ōrite mā te whakarahi ake, mā te whakaiti iho rānei.

Te Tau 10

- ki te whakahāngai i te whakaaro pānga riterite hei whakaoti rapanga e whai wāhi nei te hurirahi, te pāpātanga, te riterite pūhui hoki, puta noa i ngā horopaki pēnei i te āhuahanga, i te pūtaiao, me te ahumoni
- ki te whakamāori, ki te whakatairite, ki te whakamahi hoki i ngā ōwehenga me ngā pāpātanga, tae atu ki ngā hautau, ki ngā tau ā-ira, me ngā waeine pūhui pēnei i te kiato, i ngā pāpātanga rerenga, me ngā whakawhitinga moni.

Knowledge: Te Whakareatanga me te Whakawehenga o ngā Tauoti

Ka whakaatu te mokopuna i tōna mōhio:

Te Tau 8

- ki te whakapuaki i te whakawehenga o tētahi rahinga ki ōna wāhanga e rua hei ōwehenga
- ki te huri i ngā ōrau, i ngā hautau me ngā ōwehenga.

Te Tau 10

- ka whakamahia ngā meka whakarea ki ngā tau nunui
- ka whakamahia te uara tū hei āwhina i te hurirahi, i te whakatau tata, me te tuhi i ngā tau tino nui, i ngā tau tino iti rānei, mā te whakamahi i te tānga ngahuru, i ngā tini pūāhua rerekē.

Knowledge: Te Whakaahua me te Whakamāori Tūponotanga

Ka whakaatu te mokopuna i tōna mōhio:

Te Tau 8

- ki te tātai me te whakamāori i ngā tūponotanga whakamātau hei hautau, hei tau ā-ira, hei ōrau hoki.

Te Tau 9

- ki te whakaahua i ngā āhuatanga e whakaaturia nei i ngā kauwhata tūponotanga
- ki te whakamārama i te take ka ōrite pea, ka rerekē rānei ngā hua ka puta i ngā whakamātau me ngā tūponotanga tātai.

Supporting teacher tool

Also included in this resource suite is a teacher tool that maps each activity in this booklet to the relevant knowledge area from the Pāngarau wāhanga ako of Te Marautanga o Aotearoa. This provides clear links between every activity and its associated knowledge area(s).

As a kaiako, this tool will assist you to identify key mathematical concepts and areas of focus within your wider pāngarau programme and subsequently select the most relevant activities to support mokopuna learning.

Please note that this mapping document should not be used as the basis for Pāngarau planning. Its purpose is to support the identification of ngohe within the student workbook that may be used to teach specific knowledge (concepts) from the Pāngarau wāhanga ako. The wāhanga ako and their associated knowledge areas are subject to change; therefore, this mapping document should be used with that caution.

This mapping document can be downloaded alongside the ākongā booklet from [Te Whai Hua - Kia Ora! | Sorted in Schools website](https://www.sortedinschools.org.nz/mme).





Answers

The following pages provide the answers to the activities in the student booklet. Mokopuna are encouraged to, where possible, work in pairs or small groups to solve the mathematical problems that challenge them.

Te Kaupapa 1

Budgeting and Paying Bills

Ngohe 1

Te Whiriwhiri i te Ōrau o Tētahi Tau

Te Momo Whakapaunga	Te Utu	Te Ōrau
Te kai	\$325	50%
Te haurehu me te hiko	\$195	30%
Te ipurangi	\$65	10%
Ētahi atu whakapaunga	\$65	10%

Ngohe 2

Ngā Penapena Pūtea a Māia

1. $\$763 - \$550 = \$213$

E \$213 i te wiki e toe ana.

2. 20% o te \$763

$0.20 \times 763 = \$152.60$

3. $\$213 - \$152.60 = \$60.40$

4. $\$10,000 \div \$60.40 = 165.56$

Me 166 wiki (e toru tau, e rua marama) te roa o te penapena a Māia.

5. Ko ētahi whakautu, ko:

- te whakaheke i te nui o te pūtea ka penapenatia i ia wiki, ka tukuna ai ki tana whāinga o te haere ki tāwāhi
- te tuku i te \$152.60 ki tana whāinga o te haere ki tāwāhi me te penapena i te \$60.40 e toe ana.
- te whakapiki i te nui o ana hāora mahi.
- te kawē i tētahi tūranga mahi tuarua.
- te kimi i tētahi hoa noho (mēnā he rūma e wātea ana i tana whare).

Ngohe 3

Ngā Whakapaunga Moni

1. $\$990 + \$5,575 \times 12 \div 26 = \$3,563.08$

2. $\$3,563.08 \div 5 = \712.62

3. $\$4,900 \div 12 \times 2 = \816.67



Ngohe 4

He Wero Ōwehenga

1. A nei ngā whakautu:

a. Ka \$92.14 te utu a Monika, ka \$61.43 te utu a Tirama rāua ko Manaia.

e. Ka \$27.86 te utu a Monika, ka \$18.57 te utu a Tirama rāua ko Manaia.

2. Ka \$41.50 te utu a Monika, ka \$10.38 te utu a Tirama, ka \$31.13 te utu a Manaia.

3. Ka \$65.63 te utu a Monika rāua ko Tirama, ka \$43.75 te utu a Manaia.

Te Kaupapa 2

Payslips and Paying Tax

Ngohe 1

Te Puka Utu

1. Te moni whiwhi peke: \$329
2. Te KiwiSaver: \$9.87
3. Te moni whiwhi more: \$284.59

Ngohe 3

Kua Whai Mahi a Māui

Hāora mahi	Utu (\$) moniwhiwhi peke	Utu (\$) moni whiwhi more
1	\$23.20	20.90
2	\$46.40	\$41.80
3	\$69.60	\$62.70
4	\$92.80	\$83.60
5	\$116.00	\$104.50
7	\$162.40	\$146.30
9	\$208.80	\$188.10
12	\$278.40	\$250.80

Ngohe 2

Te Mahi i Muri i te Kura

1. \$235
2. \$12,220
3. 10.5%
4. \$24.67
5. \$1282.84

1. Ko te hāora mahi, ko te utu moniwhiwhi peke, ko te utu moniwhiwhi more.
2. He rārangi tōtika te kauwhata nā te mea ka noho pūmau ngā utu.
3. $\$23.20 \times 15$ $\$20.90 \times 15$
4. Kei te takiwā o te 175 ngā haora mahi.
5. Mā te mokopuna ēnei whakaaro.
6. Mā te whakamahi i te ripanga rorohiko e puta ai ngā kauwhata rārangi.

Ngohe 4

Te Pepa Utu

1. Answers are highlighted in the following image.

 AUahi TŪROA LTD					
Roimata Paerata 16 Rori o Hēmi Kirikiriroa	Nama Tāke 027-598-412 Tohu Tāke MSL	Ngā rā hararei e wātea ana 7.5 days Ngā rā māuiui e wātea ana 3.0 days			
Te mutunga o te wā utu 01/06/2023					
Te utu ā-tau \$37970					
Whakamārama	Te rahi	Te waeine	Te utu i te hāora	Te tapeke	Tēnei utu
Hāora noa	41.00	Ngā hāora	\$18.25	\$748.25	
Hāora hemihemi	2.50	Ngā hāora	\$22.81	\$57.03	
Utu Peke					\$805.28
Te utu i a koe e whiwhi moni ana (PAYE)					-\$122.08
Te utu hei āwhina i te hunga whara					-\$11.19
Ngā tangohanga pūtea taurewa ākongā					\$0.00
Kiwisaver 3%					\$0.00
Utu More					\$672.01
Te takoha KiwiSaver a tō kaitukumahi					\$0.00

2. $(\$122.08 + \$11.19) \div \$805.28 \times 100\% = 16.55\%$

3. $0.06 \times \$805.28 = \48.32

 **Ngohe 5**

Te Tāke Moni Whiwahi

1. See the following table for answers:

Mō ia tāra o te moni whiwahi	Te pāpātanga tāke moni whiwahi hei ōrau	Te pāpātanga tāke moni whiwahi hei tau ā-ira	Te pāpātanga tāke moni whiwahi hei hautau rūnā
Atu ki te \$14,000	10.5%	0.105	21/200
Atu i te \$14,000 ki te \$48,000	17.5%	0.175	7/40
Atu i te \$48,000 ki te \$70,000	30%	0.3	3/10
Atu i te \$70,000 ki te \$180,000	33%	0.33	33/100
I tua atu i te \$180,000	39%	0.39	39/100

2. **Te tāke mō te \$25,000:**

$$= (0.105 \times \$14,000) + 0.175 \times (\$25,000 - \$14,000)$$

$$= \$3,395$$

Te tāke mō te \$50,000:

$$= (0.105 \times \$14,000) + 0.175 \times (\$48,000 - \$14,000) + 0.3 \times (\$50,000 - \$48,000)$$

$$= \$8,020$$

Te tāke mō te \$75,000:

$$= (0.105 \times \$14,000) + 0.175 \times (\$48,000 - \$14,000) + 0.3 \times (\$70,000 - \$48,000)$$

$$+ 0.33 \times (\$75,000 - \$70,000)$$

$$= \$15,670$$

Ngohe 6

Ko Taku Moni Whiwhi i te Kura

Ngā Hararei ā-Motu		
Āperira	Mei	Hune
<p>Te Paraire o Te Aranga (Good Friday)</p> <p>Te Mane o Te Aranga (Easter Monday)</p> <p>Te Rā o ngā Hōia (ANZAC)</p>		<p>Te Rā Whānau o te Kīngi (King's Birthday)</p>

- $23.50 \times 1.5 = \$35.25$
 $\$35.25 \times 8$ (ngā hāora) = \$282
 $\$282 \times 6$ (ngā rangi hararei) = \$1692

- Ko te \$564 te rerekētanga.

Te huarahi tuatahi:

$$\begin{aligned} \$23.50 \times 8 &= \$188 \\ \$188 \times 6 &= \$1128 \\ \$1692 - \$1128 &= \$564 \end{aligned}$$

Te huarahi tuarua:

$$\begin{aligned} \$1692 / \$1.5 &= \$1128 \\ \$1692 - \$1128 &= \$564 \end{aligned}$$

Ngohe 7

Ko Hinerau rāua ko Kea

- \$3498

- \$31

3. Ka tuku ngā mokopuna i te huhua o ngā whakautu. Ko ētahi tauira, ko:

- te nui ake o ngā hāora mahi a Hinerau
- te hararei a Hinerau
- te whakatutuki a Hinerau i ētahi hāora mahi a tētahi anō kaimahi
- te hoki māuiui atu a Hinerau ki te kāinga.

- \$3309.23

5. Ka tuku ngā mokopuna i te huhua o ngā whakautu. Ko ētahi tauira, ko:

- te āheinga kia nui ake ō moni whiwhi mā te utu ā-hāora, tēnā i te utu ā-tau
- te kitenga, ka iti noa pea te utu ā-hāora a tētahi kaimahi e utua ana mā te utu ā-tau
- ngā hua o ngā hāora tuwhene mēnā ko te utu ā-hāora te karawhiu
- te ōrite o ngā utunga mēnā ko te utu ā-tau te karawhiu.

- Kei te āhua o ngā mokopuna ngā whakautu. Ko te āhuatanga hirahira katoa, ko tā rātou parahau i te take i kōwhiria ai tētahi momo utunga.

Ngohe 8

Te Whiriwhiri i te Utu Whai Tāke Hokohoko

1. $\$1,250 \times 1.15 = \$1,437.50$
 $\$3,200 \times 1.15 = \$3,680$
 $\$44.50 \times 1.15 = \51.18
 $\$2,300 \div 1.15 = \$2,000$
 $\$82.75 \div 1.15 = \71.96
 $\$1,250 \div 1.15 = \$1,086.96$
2. $\$825 \div 1.15 = \717.39
 $\$825 - \$717.39 = \$107.61$

Ngohe 9

Mai i te Kaiwhakatipu ki te Kiritaki (Hei Mahi 1)

1. Nā te kaihoko whakamutunga te GST i kohi i te kiritaki i te hokonga whakamutunga o te rawa.
2. \$60.00
3. \$120.00
4. Ka ahu mai te rerekētanga i te mea ka utu noa ia pakihi i te GST mō te wāhanga ka āpitihi noatia e tērā pakihi. Ka utua noatia te wāhanga o te GST e hāngai ana ki ia hātepe o te tukanga. Kāore e utua te katoa o te GST i ngā wā katoa.
5. Ko te tapeke more, ko te tapeke i mua i te utanga o te GST. Ko te tapeke katoa, ko te tapeke i muri i te utanga o te GST.

Ngohe 10

Mai i te Kaiwhakatipu ki te Kiritaki (Hei Mahi 2)

He taurira whakautu noa tēnei:

- **Te rawa i kōwhiria rā:** Me tūturu, me motuhenga (hei taurira, he kai, he kākahu, he whāriki).
- **Te ara tukutuku:**
 - Me whā, me neke atu rānei, ngā wāhanga: **Kaiwhakatipu > Kaiwhakaputa > Kaiwhakanao > Kaihoko Whakamutunga > Kiritaki**
 - Me tika te tapanga o ia wāhanga.
- **Ngā taipitopito:** Te hunga e whai wāhi atu ana + Te utu (hui katoa te GST) i ia wāhanga.
- **Te tātaitanga o te GST:** E tika ana te whakamahinga o te 15% GST, ā, e whakaatu ana i ana mahinga.
- **Te tūtohi GST:** Te tapeke o te GST + Te tapeke o te utu o ia wāhanga.
- **Kua whakautua ngā pātai ārahi:** Nā wai i whakatipu, i whakaputa, i whakanao, ā, nā wai hoki i hoko (me te utu tapeke, hui katoa te GST).
- **Te whakaaturanga:** E nahanaha ana te takoto (hei tūtohi, hei hoahoa rānei). E arorau ana te rere atu i te kaiwhakatipu ki te kiritaki.

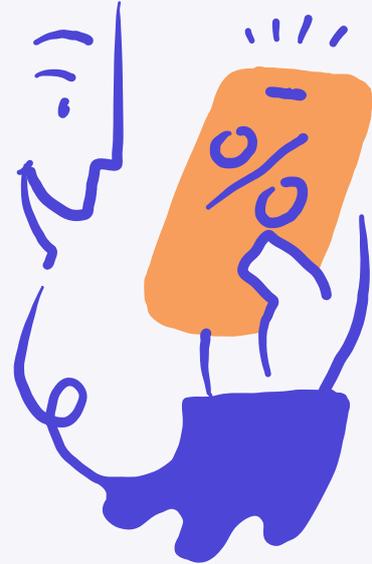
Te Kaupapa 3

Running Your Own Business

Ngohe 1

Te Mahi i te Kāinga

1. 50%
2. 10%
3. 100%



Ngohe 2

Te Pakihi a Mārama (Wāhanga Tuatahi)

Ngā whakapaunga utu o te marama		Te tapeke e āhei nei a Mārama ki te kerēme
Te hiko	\$236	\$23.60
Tana waea pūkoro	\$75	\$7.50
Ngā rēti	\$2600	\$260
Te ipurangi	\$90	\$9
Te hopi me te whēru	\$27	\$2.70
Ngā rawa mō te tari	\$25	\$25
He tēpu hou mō te tari	\$485	\$485
	Te tapeke	\$812.80

Ngohe 3

Te Pakihi a Mārama (Wāhanga Tuarua)

1. \$2370
2. \$197.50
3. \$237

4. Me whānui ngā whakautu a te mokopuna. Anei ētahi tauira:

- I te wā o te hōtoke, ka kaha ake te whakamahi i te hiko.
- I haere a Mārama ki wāhi kē ki te mahi.
- I te wā raumati, kāore he take o te whakamahi i te pūrere whakamahana.
- I te marama o Pēpuere i tae atu tōna whānau ki tōna whare.



Ngohe 4

Te Pakihi a te Whānau o Arihia

1. \$6
E rua ngā huarahi whiriwhiri:
 $15\% \text{ of } \$40 = \6
 $\$40 \times 0.15 = \6
2. \$34.78
 $\$40 \div 1.15 = \34.78
3. \$60
 $\$6 \times 10 = \60
4. Ko te moni whiwhi (GST kore) o te hoko atu i ngā tihāte 15, ko te \$521.74.
 $15 \times \$40 = \600 (GST āpiti)
 $\$600 \div 1.15 = \521.74 (GST kore)

Ngohe 5

Ngā Mahi Kuti Karaehe a Haami rāua ko Reweti

1. Haami: Whakareatia te horahanga ki te \$1.15 (GST āpiti).

Reweti: Whakareatia te horahanga ki te \$1.50, ka āpiti ai i te \$10.

2. Haami: $H = 1.15A$

Reweti: $R = 1.5A + 10$

3. Tirohia te tūtohi i raro nei:

Haami	Mane	Tūrei	Wenerei	Tāite	Paraire
Te horahanga	50sqm	25sqm	15sqm	40sqm	60sqm
Te utu i te rā	\$57.50	\$28.75	\$17.25	\$46.00	\$69
Reweti	Mane	Tūrei	Wenerei	Tāite	Paraire
Te horahanga	50sqm	30sqm	25sqm	30sqm	30sqm
Te utu i te rā	\$85	\$55	\$47.50	\$55	\$55

4. Nā Reweti.

5. Ētahi tauira whakautu:

- Ko te whakapiki i tana utu i ia pūrua mita.
- Ko te āpiti i ētahi utu kē atu (pēnei i te utu o te taenga atu).
- Ko te kuti i ngā karaehe o ētahi whenua nui ake.
- Ko te āpiti i ētahi anō ratonga, pēnei i te huti tarutaru, i te tiaki māra rānei.

6. Ētahi tauira o ngā whakautu:

- He pakihi nui pea tāna.
- Kāore pea te nui o te moni whiwhi i te tau e neke atu i te \$60,000.
- He mahi harangotengote tēnei mā Reweti.

7. Kei tēnā, kei tēnā tāna ake whakautu. Ko te utu, ko te:

- **Haami:** \$23
- **Reweti:** \$40

8. Kei tēnā rōpū, kei tēnā rōpū ā rātou ake whakautu.

Ngohe 6

Ngā Pakihi a Mārama rāua ko Teina

1. Te monihua i mua i te tāke:

$$\$12,000 - \$4,800 = \$7,200$$

Te monihua i muri i te tāke:

$$20\% \text{ of } \$7,200 = 0.20 \times \$7,200 = \$1,440$$

$$\$7,200 - \$1,440 = \$5,760$$

2. Te monihua i mua i te tāke:

$$\$30,000 - \$18,000 = \$12,000$$

Te monihua i muri i te tāke:

$$28\% \text{ of } \$12,000 = 0.28 \times \$12,000 = \$3,360$$

$$\$12,000 - \$3,360 = \$8,640$$

3. $\$8,640 \div 3 = \2880

4. Te monihua a Mārama: $\$5,760$

Te monihua a Teina: $\$2,880$

5. Mārama:

- Ka pupuri ia ki te katoa o ngā monihua.
- Mēnā kāore e whai hua te pakihī, nōna tonu te hē.
- Ka whakahaere ia i ngā āhuetanga katoa o te pakihī.

Teina:

- Ka riro i a ia te hautoru o ngā monihua a te pakihī.
- He nui ake tana pāpātanga tāke.
- Ka riro mā te tokotoru e kawē ngā tūraru me ngā haepapa o te pakihī.

Ngohe 7

Te Whakatairite i ngā Monihua

1. $65\% \text{ of } \$2,880 = \$1,872$

$$0.65 \times \$2,880 = \$1,872$$

$$\$2,880 + \$1,872 = \$4,752$$

2. $1/3 = \$4,752$

$$\$4,752 \times 3 = \$14,256$$

3. $0.35 \times \$5,760 = \$2,016$

$$\$5,760 - \$2,016 = \$3,744$$

4. Ko ētahi whakautu tērā pea ka puta, ko:

- te nui ake o te wahie ka hokona nā te makariri o ngā marama hōtoke
- te pikinga pea o te utu o te wahie
- te whakawhānuitanga pea o ngā takiwā e whai wāhi atu nei te pakihī.

5. Ka rerekē pea ngā whakautu. Me hoatu ngā mokopuna i ngā taunaki hei tautoko i te momo anga ka kōwhiria e rātou.

Ngohe 8

Te Pēke Hangarua

1. $\$24,500 + \$27,000 + \$29,800 + \$32,400 = \$113,700$

2. **Ngā utu kaimahi:** E \$40,000 i te tau.

Te rīhi: $\$1,200 \times 12$ ngā marama = \$14,400 i te tau.

Ngā whakatairanga: E \$5,000 i te tau.

Ngā rauemi: $\$600 \times 12$ ngā marama = E \$7,200 i te tau.

Te tapeke o ngā whakapaunga: $\$40,000 + \$14,400 + \$5,000 + \$7,200 = \$66,600$

3. $\$113,700 - \$66,600 = \$47,100$

4. **Ngā koha:**

- Te marae: E \$2,500
- Te kura: \$1,200
- Te tapeke o ngā koha
- $\$2,500 + \$1,200 = \$3,700$

Ngā hua tāke

(ko te 1/3 o te tapeke o ngā koha):

$\$3,700 \div 3 = \$1,233.33$

5. **Ka huhua ngā whakautu:**

Ko te mihi i te koha kua tukuna.

- Ko te hāpai i ngā pakihī kia matatika te kawē i ngā mahi.
- Ko te poapoa i ngā pakihī kia tuku koha.
- Ko te whakaheke i te nui o te hiahia o ngā rōpū ohaoha ki ngā pūtea kāwanatanga.

6. **Ka huhua ngā whakautu:**

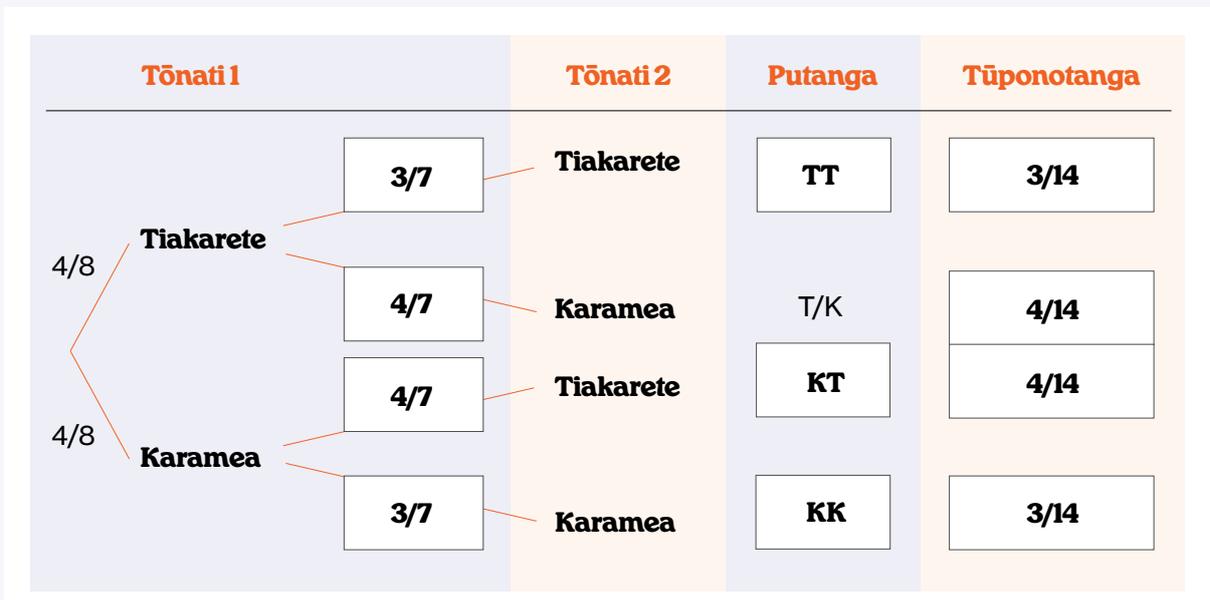
- Ko te whakawhānui i ngā momo whakatairanga.
- Ko te whakamahi i ngā pae pāpori.
- Ko te whakawhānui i ngā hanga ka hokona atu e te pakihī.
- Ko te whakaheke i te tokomaha o ngā kaimahi.
- Ko te whakaheke i ngā whakapaunga.
- Ko te kimi i ētahi anō puna rauemi.

7. 5% of \$47,100

$0.05 \times \$47,100 = \$2,355$

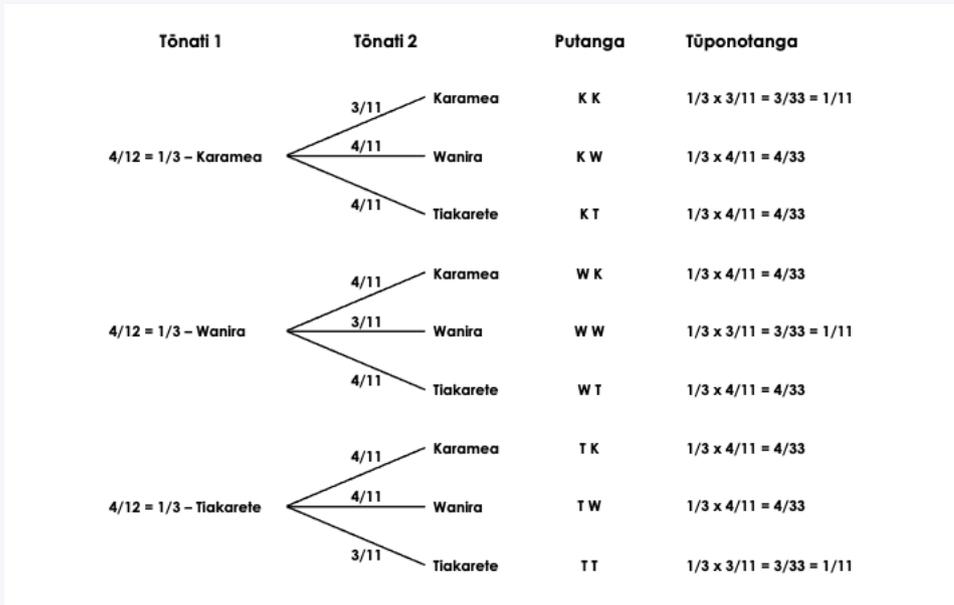
Te Pakihi Hou a Māui

1. a. $1/2 = 50\%$
- e. He pāpono whakawhirinaki.
- i. $4/7$ (E 7 katoa ngā tōnati e toe ana. E 4 o ērā he karamea).
- o. Te hoahoa rākau:



- u. Ngā tūponotanga:
 - T (tiakareti, karamea): $3/14$
 - T (he ōrite ngā tōnati e rua): $6/14$ ($3/14 + 3/14$)
 - T (he rerekē ngā tōnati e rua): $8/14$ ($4/14 + 4/14$)

2. a. Te hoahoa rākau:



e. $1/3$

i. $3/11$ (11 ngā tōnati e toe ana. E 3 he karamea)

o. $4/11$ (11 ngā tōnati e toe ana. E 4 he wanira)

u. **Ngā tūponotanga:**

- T (he ōrite ngā tōnati e rua): $9/33$ ($3/33 + 3/33 + 3/33$): $3/11$
- T (he karamea, he tiakareti): $8/33$ ($4/33 + 4/33$)
- T (he rerekē ngā tōnati e rua): $24/33$ ($4/33 + 4/33 + 4/33 + 4/33 + 4/33 + 4/33$)

3. Kei te ākongā ōna ake whakaaro.

Te Kaupapa 4

Loans

Ngohe 1

Te Pūtea Taurewa Ākonga a Roimata

1. $\$75,000 - \$24,128 = \$50,872$
2. $0.12 \times \$50,872 = \$6,104.40$
3. $\$6,104.40 \div 52 = \117.39
4. $\$34,500 \div \$6,104.40 = 5.65$
E rima tau, e waru marama (ko te 65% o te 12 marama)

5. Te moni whiwhi hou:

$$0.10 \times \$75,000 = \$7,500$$
$$75,000 + 7,500 = \$82,500$$

Ngā utunga pūtea taurewa mokopuna:

$$\$82,500 - \$24,128 = \$58,372$$
$$0.12 \times \$58,372 = \$7,004.64$$

Ngohe 2

Te pae runga mō te whakaea moni taurewa ākonga

1. 1 tau = 26 ngā rua wiki
 $\$20,020 \div 26 = \770
2. $(\$860 - \$770) \times 0.12 = \$10.80$



Ngohe 3

Te Moni Taurewa

1. Kei te tūtohi nei ngā whakautu:

Te marama	Te tau taurewa	Te huamoni ā-marama, e 2% ana i te marama	Te tau kua utungia	Te tau hou
Mei	\$3,800.00	\$76.00	\$150	\$3,726.00
Hune	\$3,724.00	\$74.52	\$150	\$3,650.52
Hūrae	\$3,650.52	\$73.01	\$150	\$3,573.53
Ākuhata	\$3,573.53	\$71.47	\$150	\$3,495.00
Hepetema	\$3,495.00	\$69.90	\$150	\$3,564.90

2. Ka rerekē ngā whakautu a tēnā ākongā, a tēnā ākongā.

3. $36 \times \$150 = \5400

4. Te pikinga ōrau = $(\$5400 - \$3800) / (\$3800) \times 100\% = 42.1\%$

Ngohe 4

Te Hoko Harangotengote

1. $\$55 + (\$1.80 \times 24) = \$98.20$

2. $\$499 \div 24 = \20.79

Ngohe 5

Te Hoko Waka

1. 5 tau = 60 marama
 $\$252 \times 60 = \$15,120$

2. $\$15,120 - \$12,000 = \$3,120$

3. $\$3,120 - \$2,686 = \$434$

Ngohe 6

Te Huamoni Tāpiri

1. $\$4,000 \times 0.01 = \40
2. $\$10,000 \times 0.0105 = \105
3. $\$3,000 \times 0.025 = \75
4. $\$2,000 \times 0.0085 = \17

Ngohe 7

Te Huamoni Whakaputu

1. \$2,680.25
2. \$848.56
3. Te huamoni i puta i te kōwhiringa
 $A = \$1,200 \times 0.0425 \times 5 = \255

Te huamoni i puta i te kōwhiringa
 $E = \$1,200 \times 1.03755 - \$1,200 = \$242.52$

He nui ake nō te pāpātanga huamoni
 i pai ake ai a kōwhiringa A.

4. $\$5,000 = P (1 + 3.75/100)^6$
 $P = \$5,000 \div 1.03756$
 $P = \$4,009.05$
 Me \$4,009 te haumi a Kahurangi

Ngohe 8

Te Tātaitai Mōkete Mataora o Sorted

Te tapeke o te taurewa tahua more	\$350,000		\$900,000		\$550,000	
Te moni kuhu	\$70,000		\$180,000		\$110,000	
Te tūmau (ngā tau)	25	20	30	20	20	15
Te kōwhiringa pāpātanga huamoni	2.95% te pāpātanga pūmau (e rua tau)		2.69% te pāpātanga pūmau (e rua tau)		4.99% te pāpātanga taurangi	
Te tapeke utunga huamoni	\$144,974	\$113,537	\$336,740	\$264,159	\$319,846	\$231,783
Te utu i ia rua wiki	\$762	\$892	\$1903	\$2239	\$1673	\$2005
Te tapeke taurewa hei utu māu	\$494,974	\$463,537	\$1,236,740	\$1,164,159	\$869,846	\$781,783

Te Moni Kuhu Wā Tūmau

1. Ka rerekē ngā whakautu a tēnā, a tēnā.
2. Ka rerekē ngā whakautu a tēnā, a tēnā.
3. Ka rerekē ngā whakautu a tēnā, a tēnā.



4. Ka rerekē ngā whakautu a tēnā, a tēnā, heoi, ka kitea pea ēnei whakautu:
 - Te uaua o te toro atu i ō pūtea mēnā e hiahiatia ana – e herea ana ō pūtea mō te wā tūmau. He whiunga utu ki a koe mēnā e hiahiatia ana ō pūtea i mua i te paunga o te wā tūmau.
 - Kāore e pērā rawa ana te pai o ngā whakahokinga pūtea. Ahakoa te haumaruru o te moni kuhu wā tūmau, kāore e pērā rawa ana i ētahi atu te pai o te huamoni.
 - Ngā pāpātanga itareti e pūmau ana – ko te raru o tēnei, mēnā ka piki ngā pāpātanga itareti, kāore koe e kite i ngā hua o tērā pikinga.
 - Kāore e ōrite ana ngā pāpātanga puta noa i ngā pēke – he pāpātanga itareti pai ake pea tā pēke kē.

Te Kaupapa 5

Retirement

Ngohe 1

Te Whakamahere i te Whakatānga

1. E hāngai ana te nui o te penapena ki te pakeke o te tangata i te wā ka timata tana penapena pūtea. Mēnā ka tōmuri tō timata ki te penapena mō te whakatānga, ka iti ake ō pūtea kua penapenatia hei te wā e whakatā ai koe.

2. Kei tēnā, kei tēnā āna ake whakautu, ā, anei pea ētahi:

- Kāore ō tātou whānau e kōrero mō te penapena pūtea, engari e tika ana kia pērā.
- Me timata taku whakaaro ki te penapena pūtea mō te whakatānga hei te wā e timata ai au ki te mahi.
- Mēnā kāore taku whānau e penapena pūtea mō te whakatānga, me roa ake e mahi ana.
- Me whakamahere tātou kia kitea tonutia ai ētahi huarahi e whai moni ai tātou i te wā ka whakatā tātou.

- 3.** a. $2548 \times \$50 = \$127,400$
e. $2028 \times \$50 = \$101,400$
i. $988 \times \$50 = \$49,400$



Te Kaupapa 6

Government Spending

Ngohe 1

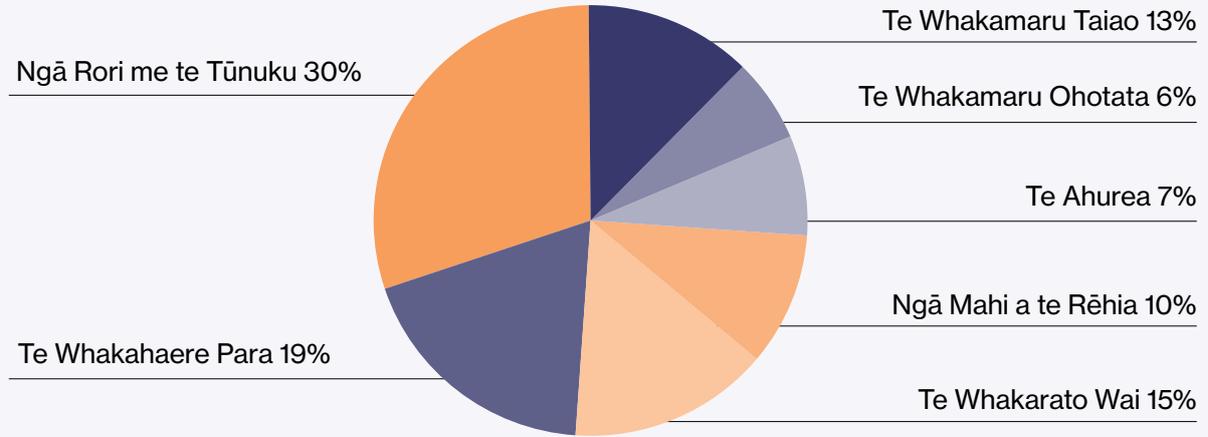
Ngā Mahere Pūtea a ngā Kaunihera ā-Rohe

1. See answers in the table below.

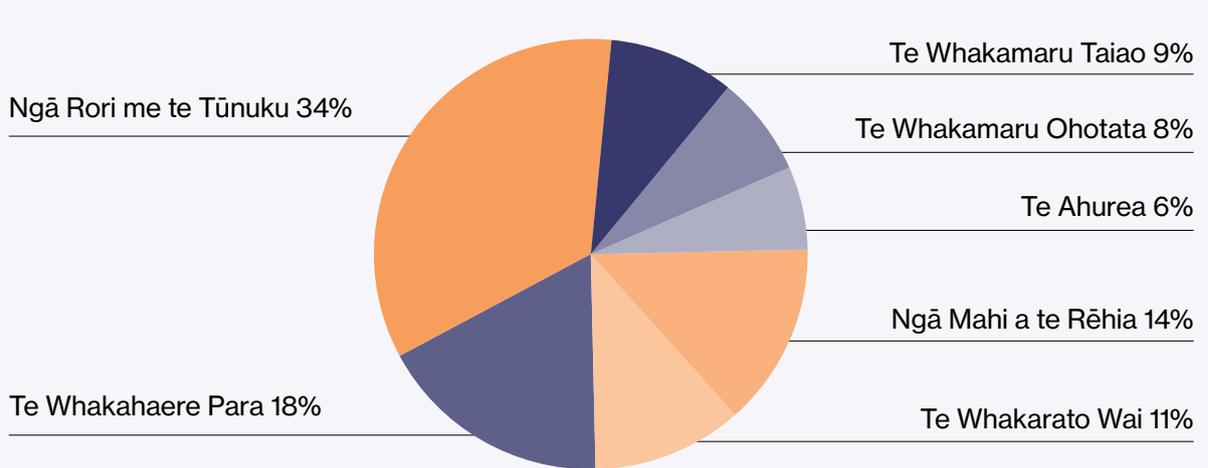
Te Momo Whakapaunga	Kaunihera ā-Rohe 1	%	Kaunihera ā-Rohe 2	%
Ngā Rori me te Tūnuku	\$48m	30%	\$55m	34.375%
Te Whakahaere Para	\$30m	18.75%	\$28m	17.5%
Te Whakarato Wai	\$24m	15%	\$18m	11.25%
Ngā Mahi a te Rēhia	\$16m	10%	\$22m	13.75%
Te Ahurea	\$12m	7.5%	\$10m	6.25%
Te Whakamaru Ohotata	\$10m	6.25%	\$12m	7.5%
Te Whakamaru Taiao	\$20m	12.5%	\$15m	9.375%
Te Tapeke	\$160m	100%	\$160m	100%

2. See the below pie graphs.

Te Kaunihera ā-Rohe 1



Te Kaunihera ā-Rohe 2



3. Anei pea ētahi whakautu:

- He nui tonu te pūtea ka whakapaua e ngā kaunihera e rua nei ki te whakapaipai i ngā rori.
- Kāore e pērā rawa ana te nui o ngā whakapaunga ki ngā take ahurea.
- Kāore hoki e pērā rawa ana te nui o ngā whakapaunga ki ngā take whakamaru ohotata. He tohu pea tēnei nō te nui ake o te whakapau a ngā kaunihera i te pūtea ki tēnei wāhanga i ngā tau o mua, ā, e pai ana pea te whakapau pūtea ki wāhi kē i tēnei tau.

4. Kaunihera ā-Rohe 1:

$\$30\text{m} \div 500,000 = \60 i te tangata kotahi

Kaunihera ā-Rohe 2:

$\$28\text{m} \div 800,000 = \35 i te tangata kotahi

5. Ngā whakautu ki raro iho nei.

- a. $\$10\text{m} \times 0.30 = \3m
 $\$10\text{m} + \$3\text{m} = \$13,000,000$
- e. Me $\$3\text{m}$ te penapena a Kaunihera ā-Rohe 2 i ngā pūtea o wāhanga kē. Ko ētahi whakautu tērā pea ka puta, ko:
 - te penapena i te $\$2\text{m}$ o te tapeke ka tukuna ki ngā rori me te tūnuku nā te mea he nui tonu te pūtea ka whakapaua ki tēnei wāhanga.
 - te penapena i te $\$1\text{m}$ o te tapeke ka tukuna ki ngā pāka me ngā mahi a te rēhia.
 - te penapena i te $\$1\text{m}$ o te tapeke ka tukuna ki ngā take whakahaere para me te whakapiki i te roa o te wā e tutuki ai ētahi kaupapa o tēnei wāhanga.

Te whai hua - kia ora

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