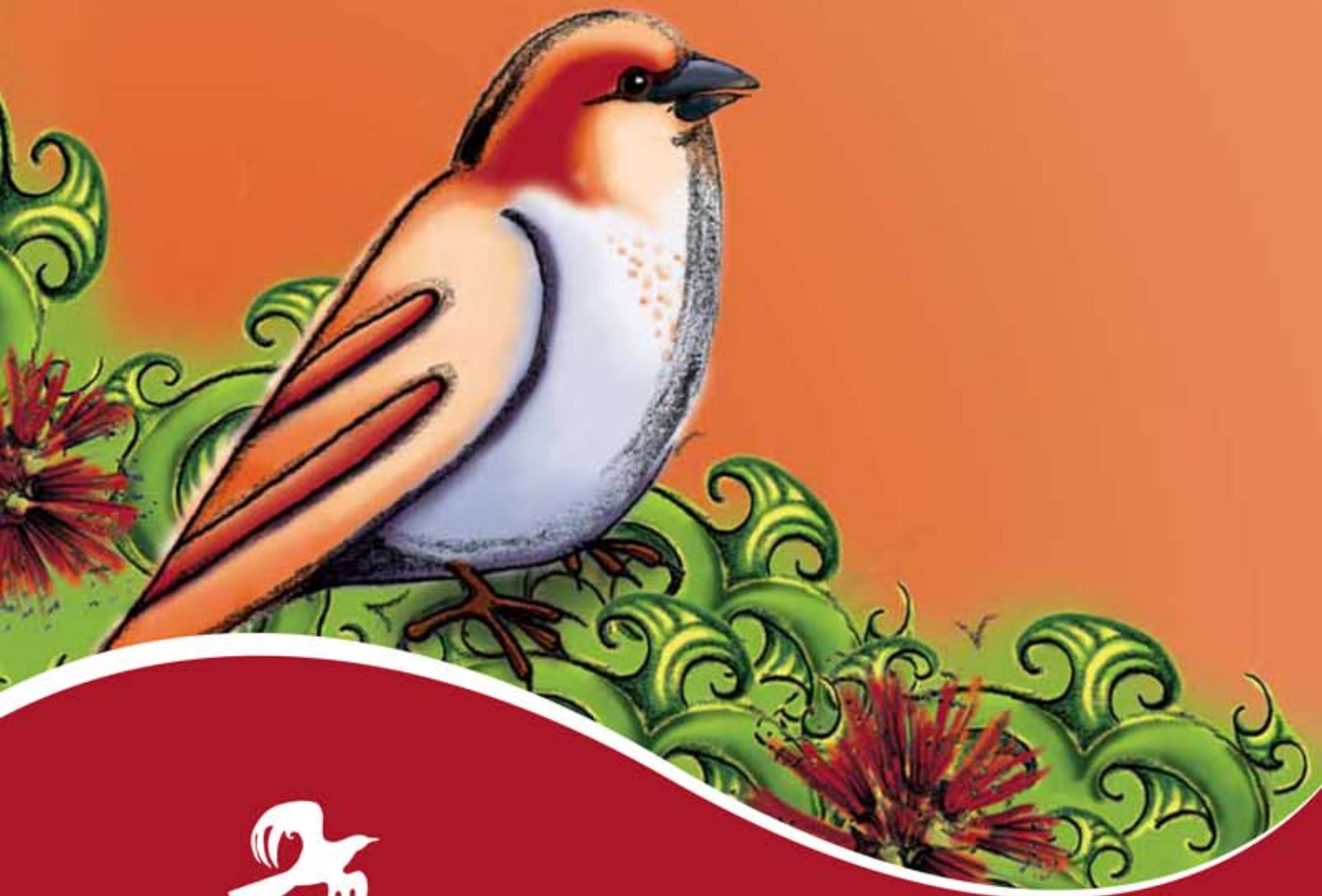


He Kura Tuhituhi

He Tuhinga Takenga Pūtaiao



He Manu Tuhituhi

He Pukapuka Arataki i te Kaituhi

Ngā Ihirangi

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Hei Whakamārama

He pukapuka tēnei mā te kaiako, mā te ākongā hoki, he pukapuka āwhina i ngā akoranga tuhituhi takenga pūtaiao.

Ki te kaiako,

Ko te tikanga māu tēnei pukapuka e whakamahi. Māu te wāhanga o te pukapuka me te tauira tuhinga e whiriwhiri e hāngai ana ki te momo akoranga, ngā mōhiotanga me ngā pūkenga o ngā ākongā.

Te pūtake o tēnei pukapuka

Ko te pūtake o te pukapuka nei he whakaatu i:

- Te pūtake o te tuhinga takenga pūtaiao
- Ngā āhuatanga reo o te tuhinga takenga pūtaiao
- Ngā wāhanga o te tuhinga takenga pūtaiao
- Tētahi ara tuhituhi

He tuhinga hei tauira¹

Kua whakaaturia ētahi tauira tuhinga mō te tuhinga takenga pūtaiao. Kua whakaaturia ngā āhuatanga reo me ngā wāhanga. Kua whāia hoki e ngā kaituhi tētahi ara tuhituhi hei tuhi i ā rāua tauira tuhinga. Ko te pūtake o te ara tuhituhi he āwhina i ngā ākongā ki te tīmata ki te takahi i te ara tuhituhi takenga pūtaiao. Ko te whāinga kia whārikilhia te tūāpapa mō ngā āhuatanga reo me ngā wāhanga o te tuhinga takenga pūtaiao.



Te matapaki

Ka kite koe i te weka i ētahi whārangi o te ara tuhituhi. Ko te putanga o te weka he tohu whakamaumahara mā te matapaki ka oti pai ai tēnei wāhanga o te tuhinga. Mā te whakawhitiwhiti kōrero, mā te āta pātaitai a te kaiako e āwhinatia ai te ākongā kia whanake ōna pūkenga tuhituhi. Kei muri i tēnei pukapuka he whārangi e whakaatu ana i ngā huarahi matapaki, ngā momo matapaki me ētahi pātai hei āwhina i te kaituhi.

Te tukanga tuhituhi

Kua whakaaturia tētahi tukanga tuhituhi ki muri i tēnei pukapuka. Ko te tikanga kia toro haere te kaituhi ki ngā wāhanga o te tukanga nei kia pai ai te takoto o tāna tuhinga.

He tauira anō

Ko ngā tauira anō hei whakaatu i te whanaketanga o ngā āhuatanga reo, ngā tikanga tuhituhi me ngā kupu mō te tuhinga takenga pūtaiao. Whiriwhiria te tauira e hāngai ana ki ngā pūkenga me ngā mōhiotanga o ngā ākongā hei whakaakoranga.

Me pēhea te whakamahi i tēnei pukapuka?

Ko te mea nui, i te tīmatanga māu ēnei momo tuhinga e whakaatu, e whakaako hoki mā te **huarahi whakaako tuhituhi ngātahi**. Whai muri, ka mahia mā te **huarahi whakaako tuhituhi me te arahanga**, tae noa ki te wā ka taea e te ākongā te mahi mā te **huarahi whakaako tuhituhi takitahi**.²

Ko te mahere e whai nei hei āwhina i a koe ki te tāutu i te huarahi whakaako tuhituhi e tika ana mō ngā ākongā:

Ngā Reanga³ o He Ara Rēre me ngā Huarahi Whakaako

	Te Huarahi Whakaako Tuhituhi Ngātahi	Te Huarahi Whakaako Tuhituhi me te Arahanga	Te Huarahi Whakaako Tuhituhi Takitahi
Ka Oho	Te takenga pūtaiao		
Ka Whai Huruuru	Te takenga pūtaiao		
Ka Marewa		Te takenga pūtaiao	
Ka Rere			Te takenga pūtaiao

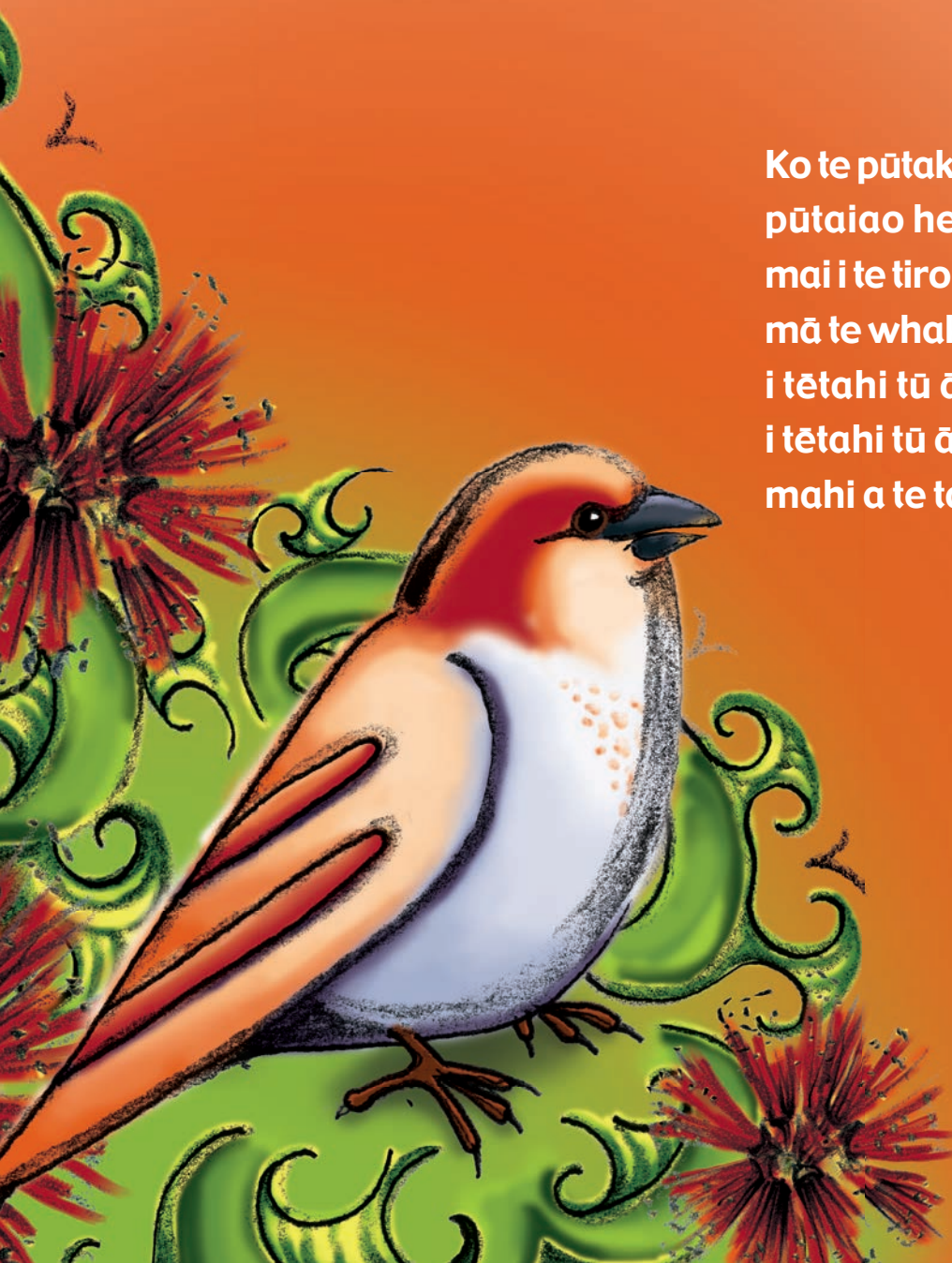
¹ Kei muri i tēnei pukapuka he kape o ngā tauira tuhinga katoa. Ka taea ēnei whārangi te tārua.

² Tirohia te pukapuka aratohu mā te kaiako *Ka Rere te Manu ki te Ao Tuhituhi*, Te Wāhanga Tuatoru, mō te whakamāramatanga o ēnei huarahi e toru mō te whakaako tuhituhi.

³ Tirohia te pukapuka aratohu mā te kaiako *Ka Rere te Manu ki te Ao Tuhituhi*, Te Wāhanga Tuarua, mō ngā āhuatanga o ngā ākongā kei ngā reanga 'Ka Oho', 'Ka Whai Huruuru', 'Ka Marewa', 'Ka Rere'.

Te Pūtake o te Tuhinga Takenga Pūtaiao

Ko te pūtake o te tuhinga takenga pūtaiao he whakamārama, mai i te tirohanga a te kaipūtaiao, mā te whakautu pātai rangahau, i tētahi tū āhuatanga o te taiao, i tētahi tū āhuatanga rānei nā te mahi a te tangata i puta ai.



He Takenga Pūtaiao hei Tauira

Ka whakaatu au i te takenga pūtaiao kua tuhia e Tangiwai mō te rere o te oro.

Ka whakaaturia:

- Ngā āhuatanga reo
- Ngā wāhanga
- Te ara tuhituhi i whāia e Tangiwai

Tirohia tāna tuhinga:

He Pēhea te Oro e Rere ai?

He maha ngā oro i te ao nei. He mea mīharo ki te rongō atu, engari he pēhea e taea ai e te tangata te rongō atu i ngā oro o te ao? Mā te hawahawa o tētahi mea, me te hawahawa o te hau, ka rere haere ngā oro katoa. Tirohia tēnei takenga pūtaiao mō te rere o te tangi a te pere.

Ko te tangi a te pere



1. Ka tangi te pere, ka hawahawa, arā, ka wiriwiri te pere.



2. Ka hawahawa hoki te hau.



3. Ka rere haere ngā ngaru hawahawa, arā, ngā ngaru oro ki te taringa.



4. Ka hawahawa te tōrino. He rite tonu te tōrino ki te pahū.



5. Ka rangona te tangi a te pere.

Ngā tohutoro

Aperahama, R. (1996). He aha te pūoro? *Te Tautoko* 44, wh. 26.

Lafferty, P. (1989). *Energy and Light*. London: Gloucester Press.

Ngā Āhuatanga Reo o te Takenga Pūtaiao



Ka tirohia ētahi o ngā āhuatanga reo o te takenga pūtaiao:

- Te kupumahi
- Te reo tūhono i te take me te pānga
- Te reo raupapa
- Te reo-ā-kaupapa

Tirohia ngā whārangi e whai ake nei.

Te Whakamāramatanga o ngā Āhuatanga Reo

Te kupumahi

Ko tā te kupumahi **he tohu i tētahi mahi**. He maha ngā kupumahi ka whakamahia hei whakamārama i tētahi takenga pūtaiao.

Hei tauira:

rongo hawahawa

wiriwiri rere haere

rangona

Te reo tūhono i te take me te pānga

Ko tā tēnei reo he tohu i te tūhonotanga o tētahi āhuatanga me te take i puta ai taua āhuatanga.

Hei tauira:

Mā te hawahawa o tētahi mea, me te hawahawa o te hau, ka rere haere ngā oro katoa.

Te reo raupapa

Ko tā tēnei reo he tohu kei te whai mai tētahi āhuatanga i tētahi, **kia mārama te raupapa o ngā mahi**.

Hei tauira:

Ka tangi te pere, **ka** hawahawa, arā, **ka** wiriwiri te pere.

Te reo-ā-kaupapa

Ko te reo-ā-kaupapa **ngā kupu e tino hāngai ana ki te kaupapa**. Kāore pea ēnei kupu e mōhiohia whānuitia ana.

Hei tauira:

hawahawa ngaru hawahawa

tōrino



Tirohia ngā āhuetanga reo
kua whakamahia e Tangiwai
i tāna takenga pūtaiao.

Te kupumahi

rongo hawahawa
wiriwiri rere haere
rangona

**Te reo tūhono i te
take me te pānga**

Mā te hawahawa
o tētahi mea, me te
hawahawa o te hau,
ka rere haere ngā oro
katoa.

Te reo raupapa

Ka tangi te pere,
ka hawahawa, arā,
ka wiriwiri te pere.

Te reo-ā-kaupapa

hawahawa
ngaru hawahawa
tōrino

He Pēhea te Oro e Rere ai?

He maha ngā oro i te ao nei. He mea mīharo ki te rongo atu, engari he pēhea e taea ai e te tangata te rongo atu i ngā oro o te ao? Mā te hawahawa o tētahi mea, me te hawahawa o te hau, ka rere haere ngā oro katoa. Tirohia tēnei takenga pūtaiao mō te rere o te tangi a te pere.

Ko te tangi a te pere



1. Ka tangi te pere,
ka hawahawa, arā,
ka wiriwiri te pere.



2. Ka hawahawa
hoki te hau.



3. Ka rere haere ngā
ngaru hawahawa,
arā, ngā ngaru oro
ki te taringa.



4. Ka hawahawa te
tōrino. He rite tonu
te tōrino ki te pahū.



5. Ka rangona te
tangi a te pere.

Ngā tohutoro

Aperahama, R. (1996). He aha te pūoro? *Te Tautoko* 44, wh. 26.
Lafferty, P. (1989). *Energy and Light*. London: Gloucester Press.

Ngā Wāhanga o te Takenga Pūtaiao



E toru ngā wāhanga o te takenga pūtaiao:

1. Te tapanga
2. Te tū āhuatanga
3. Te takenga pūtaiao

Tirohia ngā whārangi e whai ake nei.

Te Whakamāramatanga o ngā Wāhanga

Te tapanga

Hei tāutu i te kaupapa o te takenga pūtaiao.

Te tū āhuratanga

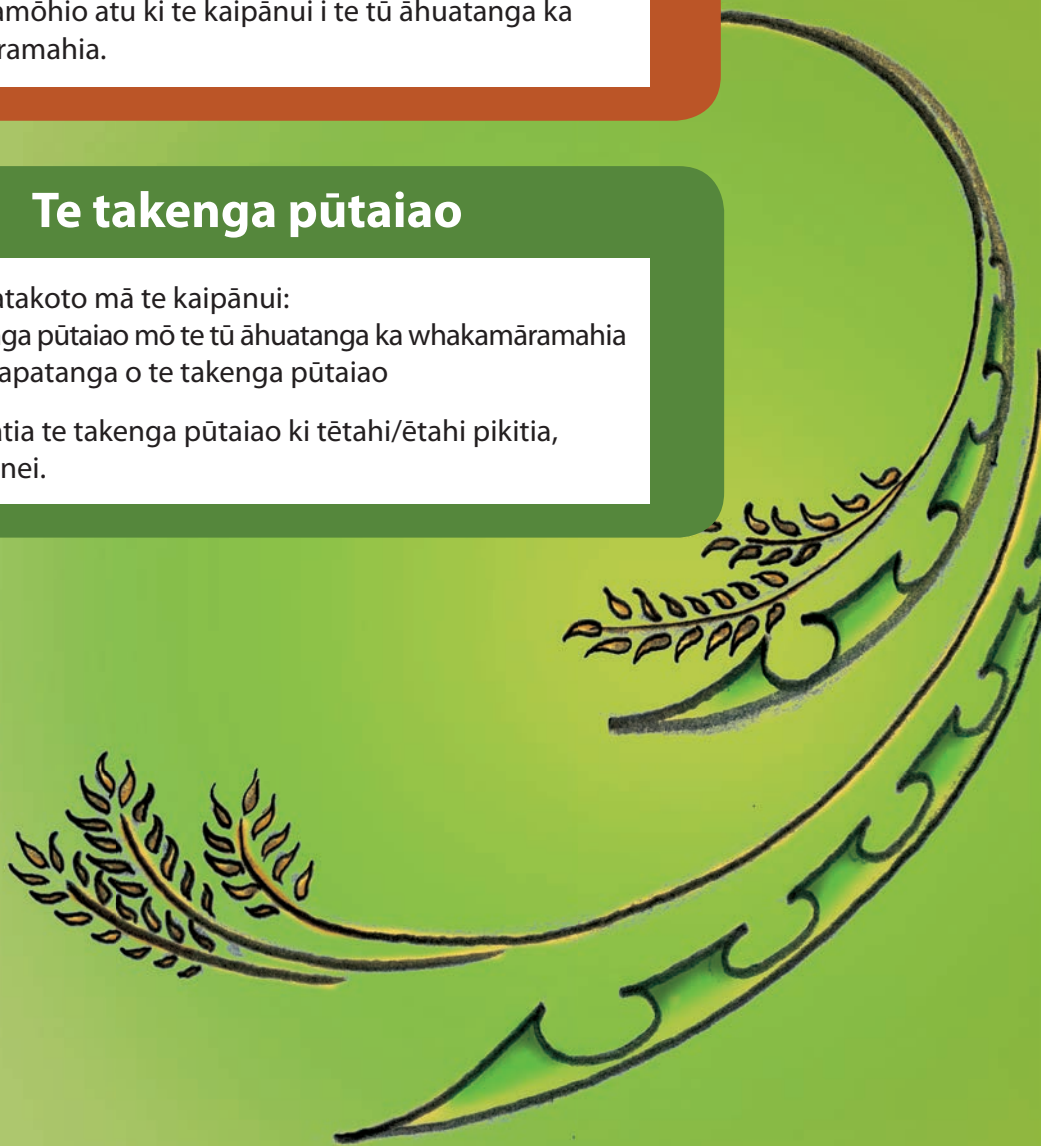
Hei whakamōhio atu ki te kaipānui i te tū āhuratanga ka whakamāramahia.

Te takenga pūtaiao

Hei whakatakoto mā te kaipānui:

- I te takenga pūtaiao mō te tū āhuratanga ka whakamāramahia
- I te raupapatanga o te takenga pūtaiao

Ka āwhinatia te takenga pūtaiao ki tētahi/ētahi pikitia, hoahoa rānei.





Tirohia ngā wāhanga e toru o
te takenga pūtaiao a Tangiwai.
Kua tāpiritia hoki ngā tohutoro hei
whakamōhio atu ki te kaipānui nō
hea te mātauranga.

Te tapanga

Te tū āhuatanga

He Pēhea te Oro e Rere ai?

He maha ngā oro i te ao nei. He mea mīharo ki te rongō atu, engari he pēhea e taea ai e te tangata te rongō atu i ngā oro o te ao? Mā te hawahawa o tētahi mea, me te hawahawa o te hau, ka rere haere ngā oro katoa. Tirohia tēnei takenga pūtaiao mō te rere o te tangi a te pere.

Ko te tangi a te pere



1. Ka tangi te pere,
ka hawahawa, arā,
ka wiriwiri te pere.



2. Ka hawahawa
hoki te hau.



3. Ka rere haere ngā
ngaru hawahawa,
arā, ngā ngaru oro
ki te taringa.



4. Ka hawahawa te
tōrino. He rite tonu
te tōrino ki te pahū.



5. Ka rangona te
tangi a te pere.

Te takenga pūtaiao

Ngā tohutoro

Aperahama, R. (1996). He aha te pūoro? *Te Tautoko* 44, wh. 26.
Lafferty, P. (1989). *Energy and Light*. London: Gloucester Press.

He Ara Tuhituhi i te Takenga Pūtaiao

Ko te ara tuhituhi e whai ake nei hei āwhina i te kaituhi ki te whakarite me te whakatakoto i ngā wāhanga o te tuhinga.

E whā ngā wāhanga o tēnei ara tuhituhi:

1. Te whakarite i te horopaki o te tuhinga
2. Te rangahau i te mātauranga

Te whakarite me te tuhituhi i:

3. Te tū āhuatanga
4. Te takenga pūtaiao

Kia mahara ake – kia tutuki pai ai te mahi tuhituhi, me matapaki ia wāhanga o te ara e te kaituhi mā tētahi huarahi matapaki.

He Ara Tuhituhi

Te horopaki

Whakaarohia:

1. Te pūtake
2. Ngā kaipānui
3. Te momo tuhinga
4. Te tapanga

Te rangahau

- Kohia ōu whakaaro
Tuhia ngā mea kua mōhiotia kētia mō te kaupapa.
- Whakaarohia te pātai rangahau
Whakaarohia tētahi pātai e hiahia ana koe ki te whakautu.
- Whiriwhiria te puna mātauranga mō te rangahau mai i te rārangi nei:
 - he pukapuka
 - he ipurangi
 - he rīpene/kōpae ataata
 - he niupepa
 - he uiuitanga
- Rapua ngā whakautu ki te pātai rangahau, tuhia hei tuhinga tīpoka
- Tuhia ngā tohutoro o te puna mātauranga kua whakamahia

Te tū āhuatanga

- Whakaritea te tū āhuatanga
- Tuhia te tū āhuatanga

Te takenga pūtaiao

- Whakaraupapahia te takenga pūtaiao
- Rapuhia/tāngia he pikitia, he hoahoa rānei hei āwhina
- Tuhia te takenga pūtaiao

I whai a Tangiwai i tēnei ara hei tuhituhi i tāna takenga pūtaiao mō te rere o te oro. Tirohia ngā whārangi e whai ake nei.

Te Horopaki



Ko te mahi tuatahi mā te kaituhi, ko te whakaaro ki te horopaki o tāna tuhinga.

Ka whakautu ia i ēnei pātai:

1. He aha te pūtake o te tuhinga?
2. Mā wai te tuhinga?
3. He aha te momo tuhinga?
4. He aha tētahi tapanga mō te tuhinga?

Ko 'Te Oro' te kaupapa pūtaiao a te akomanga o Tangiwai. Tirohia ngā whakautu a Tangiwai ki ngā pātai mō te horopaki o tāna tuhinga. Kia whakatauria tāna pātai rangahau, ka whakaaro a Tangiwai ki te tapanga.



- | | |
|----------------------------|---|
| 1. Te pūtake: | He whakamārama i tētahi āhuatanga mō te oro |
| 2. Ngā kaipānui: | Ko ōku hoa mahi me te hapori o te kura |
| 3. Te momo tuhinga: | He takenga pūtaiao |

Te Rangahau

Ka huri a Tangiwai i nāiane i ki te rapu mātauranga e pā ana ki te rere o te oro.

Tuatahi, ka kohikohi ia i ōna whakaaro.
Tuarua, ka whakaaro ki tētahi pātai rangahau.
Tuatoru, ka whiriwhiri i te puna mātauranga.
Tuawhā, ka rapu i te whakautu ki te pātai rangahau,
ka tuhituhi hei tuhinga tīpoka.
Tuarima, ka tuhituhi i ngā tohutoro mō te tuhinga.

Kohia ōu whakaaro

I te tuatahi, ka whakatakoto a Tangiwai i ōna whakaaro mō te oro. Tērā pea kei te tika ōna whakaaro me ōna mōhiotanga, tērā pea kāore i te tika. Mā te rangahau ia ka mōhio.

Mā te hau te oro e kawe.

He maha ngā oro o te ao.

Te oro

Mā te taringa o te tangata te oro e hopu, kia rangona ai.



Whakaarohia te pātai rangahau

Ki tō Tangiwai mōhio, mā te hau te oro e kawe, engari
kei te hiahia ia ki te mōhio he pēhea te oro e rere ai.
Ko tēnei tāna pātai rangahau. Ka whakatau hoki a Tangiwai
ko te pātai rangahau te tapanga mō tāna tuhinga.

He Pēhea te Oro e Rere ai?

Whiriwhiria te puna mātauranga hei rangahau

Ka tirohia e Tangiwai ētahi pukapuka
hei rapu mātauranga.



Rapua ngā whakautu ki te pātai rangahau, tuhia hei tuhinga tīpoka

Ka kite a Tangiwai i te takenga pūtaiao mō te rere o te oro i roto i ngā pukapuka e rua. Ia ia e pānui ana i ēnei pukapuka:

- Ka tuhi ia i ngā tuhinga tīpoka hei whakautu i te pātai rangahau
- Ka rapu i ngā whakamārama mō te reo-ā-kaupapa ka puta mai

He pēhea te oro e rere ai? - mā te hawahawa o te hau

ka tangi tētahi mea, ka wiriwiri

ka hawahawa te hau huri noa

ka neke haere ngā ngaru hawahawa - ngaru oro

ka tau ki te taringa

ka whakahawahawa i te tōrino - he kiri iti mārō, rite ki te pahū

ka rangona te tangi



Tuhia ngā tohutoro o te puna mātauranga

Ka tuhi a Tangiwai i ngā tohutoro mō ngā pukapuka kua whakamahia e ia. Kia mutu tāna tuhinga, ka tāpiritia atu ngā tohutoro.

Ngā tohutoro

Aperahama, R. (1996). He aha te pūoro? Te Tautoko 44, wh. 26.

Lafferty, P. (1989). Energy and Light. London: Gloucester Press.

Te Tū Āhuatanga



Ka whakataua a Tangiwai ki te whakamārama i te tangi a te pere hei taurira mō te rere o te oro. Hei tīmatanga mō te tuhinga, ka whakaaro a Tangiwai ki tētahi whakaaro whānui mō te oro. Ka whakaaro hoki ia me pēhea te whakarāpopoto i te takenga pūtaiao e whai ana.



He whakaaro whānui mō te oro

- He maha ngā oro
- He mīharo ki te rongō - engari pēhea?

Hei whakarāpopoto i te takenga pūtaiao

Mā te hawahawa o tētahi mea me te hau ka rere te oro

Kātahi ka āta tuhi a Tangiwai hei rerenga tuhituhi.

He whakaaro whānui mō te oro

He maha ngā oro i te ao nei. He mea mīharo ki te rongō atu, engari he pēhea e taea ai e te tangata te rongō atu i ngā oro o te ao? Mā te hawahawa o tētahi mea, me te hawahawa o te hau, ka rere haere ngā oro katoa. Tirohia tēnei takenga pūtaiao mō te rere o te tangi a te pere.

He whakarāpopotonga o te takenga pūtaiao

Te tū āhuatanga

Te takenga pūtaiao



Te Takenga Pūtaiao

I nāianeī ka whakarite a Tangiwai i te takenga pūtaiao.
Ko te mea nui, kia mārama te raupapa.

Whakaraupapahia te takenga pūtaiao

Ka titiro anō a Tangiwai ki āna tuhinga tipoka. Kātahi
ka whakakī ia i tētahi mahere ripo hei whakaraupapa
i tāna takenga pūtaiao mō te tangi a te pere.



1. *kia patu i te pere, ka hawahawa*

2. *ka hawahawa te hau*

3. *ka rere ngā ngaru hawahawa (ngā ngaru oro)*

4. *ka tau ki te taringa*

5. *ka hawahawa te tōrino*

6. *ka rangona te tangi*

Kei te whārangi 51 he mahere mā te kaituhi.

Rapuhia/tāngia he pikitia, he hoahoa rānei hei āwhina



He uaua ki te whakamārama i te rere o te oro mā te kupu anake. Nō reira, ka rapu a Tangiwai i ētahi pikitia hei āwhina. Mā te pikitia me te kupu ka mārama te kaipānui.



Tuhia te takenga pūtaiao



*Ka titiro anō a Tangiwai ki tana mahere ripo,
ka āta tuhi i ngā whakamārama mō ngā pikitia
hei rerenga tuhituhi.*

Hei āwhina i te kaipānui:

- Ka tāpiritia ngā nama
- Ka whakamāramatia te reo-ā-kaupapa



1. Ka tangi te pere,
ka hawahawa, arā,
ka wiriwiri te pere.



2. Ka hawahawa
hoki te hau.



3. Ka rere haere ngā
ngaru hawahawa,
arā, ngā ngaru oro
ki te taringa.



4. Ka hawahawa te
tōrino. He rite tonu
te tōrino ki te pahū.



5. Ka rangona te
tangi a te pere.

Te tū āhuatanga

Te takenga pūtaiao

Te Takenga Pūtaiao a Tangiwai

Tirohia ngā wāhanga katoa
o te tuhinga a Tangiwai.

He Pēhea te Oro e Rere ai?

He maha ngā oro i te ao nei. He mea mīharo ki te rongō atu, engari he pēhea e taea ai e te tangata te rongō atu i ngā oro o te ao? Mā te hawahawa o tētahi mea, me te hawahawa o te hau, ka rere haere ngā oro katoa. Tirohia tēnei takenga pūtaiao mō te rere o te tangi a te pere.

Ko te tangi a te pere



1. Ka tangi te pere,
ka hawahawa, arā,
ka wiriwiri te pere.



2. Ka hawahawa
hoki te hau.



3. Ka rere haere ngā
ngaru hawahawa,
arā, ngā ngaru oro
ki te taringa.



4. Ka hawahawa te
tōrino. He rite tonu
te tōrino ki te pahū.



5. Ka rangona te
tangi a te pere.

Ngā tohutoro

Aperahama, R. (1996). He aha te pūoro? *Te Tautoko* 44, wh. 26.

Lafferty, P. (1989). *Energy and Light*. London: Gloucester Press.

He Takenga Pūtaiao hei Tauira

Ka whakaatu au i te takenga pūtaiao kua tuhia e Kapua mō te hekenga mai o te ua.



Ka whakaaturia:

- Ngā āhuatanga reo
- Ngā wāhanga
- Te ara tuhituhi i whāia e Kapua

Tirohia tāna tuhinga:

He aha te Ua i Heke ai?

Kua kite tātou i te ua e heke mai ana, engari he aha te ua i heke ai? Mā te hurihanga o te wai, ka heke mai te ua.

Te Hurihanga Wai

E rima ngā wāhanga o te hurihanga wai: te mau wai, te whakaeto wai, te tōtā wai, te ua, te whakaputa wai. Tirohia te hoahoa e whai ake nei.

1. Te Mau Wai

Kei te moana, kei ngā tōpito kōpaka (ngā papa tio nunui), kei ngā awa me ngā roto te nuinga o te wai e mau ana.

2. Te Whakaeto Wai

Nā te mahana o Tama-nui-te-rā, ka hurihia te wai o runga i te whenua me te moana hei wairehu, arā, he kōpata wai tino iti e rere ana i roto i te hau.

3. Te Tōtā Wai

Ka piki ake ngā wairehu, ka mātaotao haere, ā, ka hurihia anō hei wai i roto i ngā kapua.

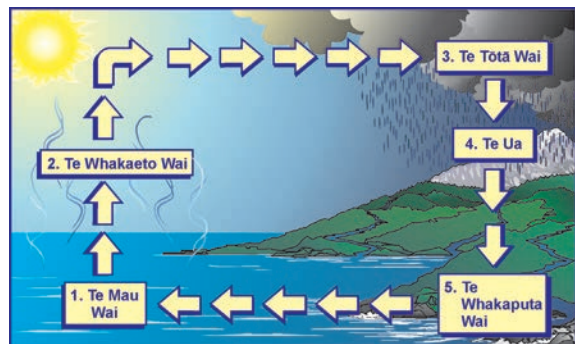
4. Te Ua

Ka puhia ake ngā kapua e te hau, ka mātaotao haere, ka taumaha haere, ā, ka heke iho te wai hei ua.

5. Te Whakaputa Wai

Ka kohikohi ngā awa i te ua. Ka rere atu ngā awa ki te moana. Ka tīmata anō te hurihanga wai.

Ka huri haere te hurihanga wai hei oranga mō Papa-tū-ā-nuku, hei oranga hoki mō te tangata.



Ngā tohutoro

Riddell, Te A. (2001). *Wai – Te Mātāpuna o te Ora*. Te Whanganui-a-Tara: Huia Publishers.
Greenaway, T. (2001). *The Water Cycle*. London: Hodder Wayland.

The Water Cycle. I tangohia i te 9/10/07, mai i <http://www.kidzone.ws/water/>

Ngā Āhuatanga Reo o te Takenga Pūtaiao



Ka tirohia ētahi o ngā āhuatanga reo o te takenga pūtaiao:

- Te kupumahi
- Te reo tūhono i te take me te pānga
- Te reo raupapa
- Te reo-ā-kaupapa

Tirohia ngā whārangi e whai ake nei.

Te Whakamāramatanga o ngā Āhuatanga Reo

Te kupumahi

Ko tā te kupumahi **he tohu i tētahi mahi**. He maha ngā kupumahi ka whakamahia hei whakamārama i tētahi takenga pūtaiao.

Hei tauira:

Ka **piki** ake ngā wairehu, ka **mātaotao haere**, ā, ka **hurihia** anō hei wai i roto i ngā kapua.

Te reo tūhono i te take me te pānga

Ko tā tēnei reo he tohu i **te tūhonotanga o tētahi āhuatanga me te take i puta ai taua āhuatanga**.

Hei tauira:

Nā te mahana o Tama-nui-te-rā, ka hurihia te wai o runga i te whenua me te moana hei wairehu.

Te reo raupapa

Ko tā tēnei reo he tohu kei te whai mai tētahi āhuatanga i tētahi, **kia mārama te raupapa o ngā mahi**.

Hei tauira:

Ka piki ake ngā wairehu, ka mātaotao haere, ā, ka hurihia anō hei wai i roto i ngā kapua.

Te reo-ā-kaupapa

Ko te reo-ā-kaupapa **ngā kupu e tino hāngai ana ki te kaupapa**. Kāore pea ēnei kupu e mōhiotia whānuitia ana.

Hei tauira:

tōpito kōpaka
hurihanga wai
whakaeto wai
tōtā wai
wairehu



Tirohia ngā āhuatanga reo
kua whakamahia e Kapua
i tāna takenga pūtaiao.

Te kupumahi

huri haere
mau
whakaeto
tōtā
whakaputa
piki
mātaotao haere
taumaha haere
heke
kohikohi
rere
huri haere

Te reo tūhono i te take me te pānga

Nā te mahana o Tama-nui-te-rā, ka hurihia te wai o runga i te whenua me te moana hei wairehu, arā, he kōpata wai tino iti e rere ana i roto i te hau.

Te reo raupapa

Ka piki ake ngā wairehu, ka mātaotao haere, ā, ka hurihia anō hei wai i roto i ngā kapua.

Te reo-ā-kaupapa

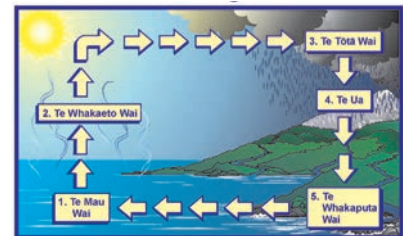
tōpito kōpaka
hurihanga wai
whakaeto wai
tōtā wai
wairehu

He aha te Ua i Heke ai?

Kua kite tātou i te ua e heke mai ana, engari he aha te ua i heke ai? Mā te hurihanga o te wai, ka heke mai te ua.

Te Hurihanga Wai

E rima ngā wāhanga o te hurihanga wai: te mau wai, te whakaeto wai, te tōtā wai, te ua, te whakaputa wai. Tirohia te hoahoa e whai ake nei.



1. Te Mau Wai

Kei te moana, kei ngā tōpito kōpaka (ngā papa tio nunui), kei ngā awa me ngā roto te nuinga o te wai e mau ana.

2. Te Whakaeto Wai

Nā te mahana o Tama-nui-te-rā, ka hurihia te wai o runga i te whenua me te moana hei wairehu, arā, he kōpata wai tino iti e rere ana i roto i te hau.

3. Te Tōtā Wai

Ka piki ake ngā wairehu, ka mātaotao haere, ā, ka hurihia anō hei wai i roto i ngā kapua.

4. Te Ua

Ka puhia ake ngā kapua e te hau, ka mātaotao haere, ka taumaha haere, ā, ka heke iho te wai hei ua.

5. Te Whakaputa Wai

Ka kohikohi ngā awa i te ua. Ka rere atu ngā awa ki te moana. Ka tīmata anō te hurihanga wai.

Ka huri haere te hurihanga wai hei oranga mō Papa-tū-ā-nuku, hei oranga hoki mō te tangata.

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Greenaway, T. (2001). *The Water Cycle*. London: Hodder Wayland.

The Water Cycle. I tangohia i te 9/10/07, mai i <http://www.kidzone.ws/water/>

Ngā Wāhanga o te Takenga Pūtaiao



E toru ngā wāhanga o te takenga pūtaiao:

1. Te tapanga
2. Te tū āhuratanga
3. Te takenga pūtaiao

Tirohia ngā whārangi e whai ake nei.

Te Whakamāramatanga o ngā Wāhanga

Te tapanga

Hei tāutu i te kaupapa o te takenga pūtaiao.

Te tū āhuratanga

Hei whakamōhio atu ki te kaipānui i te tū āhuratanga ka whakamāramahia.

Te takenga pūtaiao

Hei whakatakoto mā te kaipānui:

- I te takenga pūtaiao mō te tū āhuratanga ka whakamāramahia
- I te raupapatanga o te takenga pūtaiao

Ka āwhinatia te takenga pūtaiao ki tētahi/ētahi pikitia, hoahoa rānei.





Tirohia ngā wāhanga e toru o te takenga pūtaiao a Kapua. Kua tāpiritia hoki ngā tohutoro hei whakamōhio atu ki te kaipānui nō hea te mātauranga.

Te tapanga

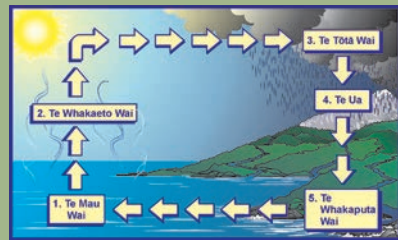
Te tū āhuatanga

He aha te Ua i Heke ai?

Kua kite tātou i te ua e heke mai ana, engari he aha te ua i heke ai? Mā te hurihanga o te wai, ka heke mai te ua.

Te Hurihanga Wai

E rima ngā wāhanga o te hurihanga wai: te mau wai, te whakaeto wai, te tōtā wai, te ua, te whakaputa wai. Tirohia te hoahoa e whai ake nei.



1. Te Mau Wai

Kei te moana, kei ngā tōpito kōpaka (ngā papa tio nunui), kei ngā awa me ngā roto te nuinga o te wai e mau ana.

2. Te Whakaeto Wai

Nā te mahana o Tama-nui-te-rā, ka hurihia te wai o runga i te whenua me te moana hei wairehu, arā, he kōpata wai tino iti e rere ana i roto i te hau.

3. Te Tōtā Wai

Ka piki ake ngā wairehu, ka mātaotao haere, ā, ka hurihia anō hei wai i roto i ngā kapua.

4. Te Ua

Ka puhia ake ngā kapua e te hau, ka mātaotao haere, ka taumaha haere, ā, ka heke iho te wai hei ua.

5. Te Whakaputa Wai

Ka kohikohi ngā awa i te ua. Ka rere atu ngā awa ki te moana. Ka tīmata anō te hurihanga wai.

Ka huri haere te hurihanga wai hei oranga mō Papa-tū-ā-nuku, hei oranga hoki mō te tangata.

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Te takenga pūtaiao

He Ara Tuhituhi i te Takenga Pūtaiao



Ko te ara tuhituhi e whai ake nei hei āwhina i te kaituhi ki te whakarite me te whakatakoto i ngā wāhanga o te tuhinga.

E whā ngā wāhanga o tēnei ara tuhituhi:

1. Te whakarite i te horopaki o te tuhinga
2. Te rangahau i te mātauranga

Te whakarite me te tuhituhi i:

3. Te tū āhuetanga
4. Te takenga pūtaiao

Kia mahara ake – kia tutuki pai ai te mahi tuhituhi, me matapaki ia wāhanga o te ara e te kaituhi mā tētahi huarahi matapaki.

He Ara Tuhituhi

Te horopaki

Whakaarohia:

1. Te pūtake
2. Ngā kaipānui
3. Te momo tuhinga
4. Te tapanga

Te rangahau

- Kohia ōu whakaaro
Tuhia ngā mea kua mōhiotia kētia mō te kaupapa.
- Whakaarohia te pātai rangahau
Whakaarohia tētahi pātai e hiahia ana koe ki te whakautu.
- Whiriwhiria te puna mātauranga mō te rangahau mai i te rārangi nei:
 - he pukapuka
 - he rīpene/kōpae ataata
 - he uiuitanga
 - te ipurangi
 - he niupepa
- Rapua ngā whakautu ki te pātai rangahau, tuhia hei tuhinga tīpoka
- Tuhia ngā tohutoro o te puna mātauranga kua whakamahia

Te tū āhuatanga

- Whakaritea te tū āhuatanga
- Tuhia te tū āhuatanga

Te takenga pūtaiao

- Whakaraupapahia te takenga pūtaiao
- Rapuhia/tāngia he pikitia, he hoahoa rānei hei āwhina
- Tuhia te takenga pūtaiao

I whai a Kapua i tēnei ara hei tuhituhi i tāna takenga pūtaiao mō te heke o te ua. Tirohia ngā whārangi e whai ake nei.

Te Horopaki

Ko te mahi tuatahi mā te kaituhi, ko te whakaaro ki te horopaki o tāna tuhinga.

Ka whakautu ia i ēnei pātai:

1. He aha te pūtake o te tuhinga?
2. Mā wai te tuhinga?
3. He aha te momo tuhinga?
4. He aha tētahi tapanga mō te tuhinga?

Ko 'Te Huarere' te kaupapa pūtaiao a Kapua mā i tēnei wā. Tirohia ngā whakautu a Kapua ki ngā pātai mō te horopaki o tāna tuhinga. Kia whakatauria tāna pātai rangahau, ka whakaaro a Kapua ki te tapanga.



- | | |
|----------------------------|--|
| 1. Te pūtake: | He whakamārama i tētahi āhuatanga mō te ua |
| 2. Ngā kaipānui: | Ko ōku hoa mahi me te hapori o te kura |
| 3. Te momo tuhinga: | He takenga pūtaiao |



Te Rangahau

Ka huri a Kapua i nāiane i ki te rapu mātauranga e pā ana ki te ua.

Tuatahi, ka kohikohi ia i ōna whakaaro.

Tuarua, ka whakaaro ki tētahi pātai rangahau.

Tuatoru, ka whiriwhiri i te puna mātauranga.

Tuawhā, ka rapu i te whakautu ki te pātai rangahau, ka tuhituhi hei tuhinga tīpoka.

Tuarima, ka tuhituhi i ngā tohutoro mō te tuhinga.

Kohia ōu whakaaro

I te tuatahi, ka whakatakoto a Kapua i ngā mea e mōhio kē ana ia mō te ua. Tērā pea kei te tika ōna whakaaro me ōna mōhiotanga, tērā pea kāore i te tika. Mā te rangahau ia ka mōhio.

Ka heke mai te ua i te rangi

Te ua

I ētahi wā ka wāipuke te awa i te taha o tōku kāinga

I te nuinga o te wa, ina pōuri ngā kapua, ka heke te ua



Whakaarohia te pātai rangahau

Ki tō Kapua mōhio ka heke mai te ua i te rangi, engari
kei te hiahia ia ki te mōhio he aha te ua i heke ai.
Ko tēnei tāna pātai rangahau. Ka whakatau hoki a Kapua
ko te pātai rangahau te tapanga mō tāna tuhinga.

He aha te Ua i Heke ai?

Whiriwhiria te puna mātauranga mō te rangahau

Ka tirohia e Kapua ētahi pukapuka
me te ipurangi hei rapu mātauranga.



Rapua ngā whakautu ki te pātai rangahau, tuhia hei tuhinga tīpoka

Ka kite a Kapua i te takenga pūtaiao mō te hekenga mai o te ua, arā, 'te hurihanga wai', i roto i ētahi pukapuka me tētahi pae tukutuku. I a ia e pānui ana:

- Ka tuhi a Kapua i ngā tuhinga tīpoka hei whakautu i te pātai rangahau
- Ka rapu i ngā whakamārama mō te reo-ā-kaupapa ka puta mai

He aha te ua i heke ai? - Te Hurihanga Wai

Te mau wai

Kei ngā moana, tōpito kōpaka, awa, roto tōpito kōpaka – ngā papa tino nunui rawa atu kei te tōpito raki me te tōpito tonga o te Ao



Te whakaeto wai

Ka mahana te wai o runga i te moana me te whenua, ka huri hei wairehu – kōpata wai tino iti e rere ana i roto i te hau

Te tōtā wai

Ka piki, ka mātaotao, ka huri hei wai kapua

Te ua

Ka puhia ngā kapua ki runga ake, ka mātaotao, ka taumaha, ka heke te ua

Te whakaputa wai

Ka kōhi ngā awa i te wai, ka rere ki te moana – ka timata anō te hurihanga

Tuhia ngā tohutoro o te puna mātauranga

Ka tuhi a Kapua i ngā tohutoro mō ngā pukapuka me te pae tukutuku kua whakamahia e ia. Kia mutu tāna tuhinga, ka tāpiritia atu ngā tohutoro.



Ngā tohutoro

Riddell, Te A. (2001). *Wai - Te Mātāpuna o te Ora*. Te Whanganui-a-Tara: Huia Publishers.

Greenaway, T. (2001). *The Water Cycle*. London: Hodder Wayland.

The Water Cycle. I tangohia i te 9/10/07, mai i <http://www.kidzone.ws/water/>

Te Tū Āhuatanga

Hei tīmatanga mō te tuhinga, ka whakaaro a Kapua ki tētahi whakaaro whānui mō te ua. Ka whakaaro hoki ia me pēhea te whakarāpopoto i te takenga pūtaiao e whai ana.



He whakaaro whānui
mō te heke o te ua

Ka kite tātou i te ua e heke mai ana - He aha te ua i heke ai?

Hei whakarāpopoto i te
takenga pūtaiao

Mā te hurihanga wai ka heke mai te ua

Kātahi ka āta tuhi a Kapua hei rerenga tuhituhi.

He whakaaro
whānui mō te ua

→ Kua kite tātou i te ua e heke mai ana, engari he aha te ua i heke ai? Mā te hurihanga o te wai, ka heke mai te ua.

↑ He whakarāpopotonga
o te takenga pūtaiao

Te tū āhuatanga

Te takenga pūtaiao

Te Takenga Pūtaiao



I nāianeī ka whakarite a Kapua i te takenga pūtaiao.
Ko te mea nui, kia mārama te raupapa.

Whakaraupapahia te takenga pūtaiao

Ka titiro anō a Kapua ki āna tuhinga tīpoka. Kātahi ka whakakī ia i tētahi mahere ripo hei whakaraupapa i tāna takenga pūtaiao.

1. *Te mau wai*
Kei ngā moana, tōpito
kōpaka, awa, roto

2. *Te whakaeto wai*
Ka mahana te wai, ka
huri hei wāirehu

3. *Te tōtā wai*
Ka piki, ka mātaotao
haere, ka huri hei
kapua

5. *Te whakaputa wai*
Ka kohikohi ngā awa i te ua,
ka rere te wai ki te moana

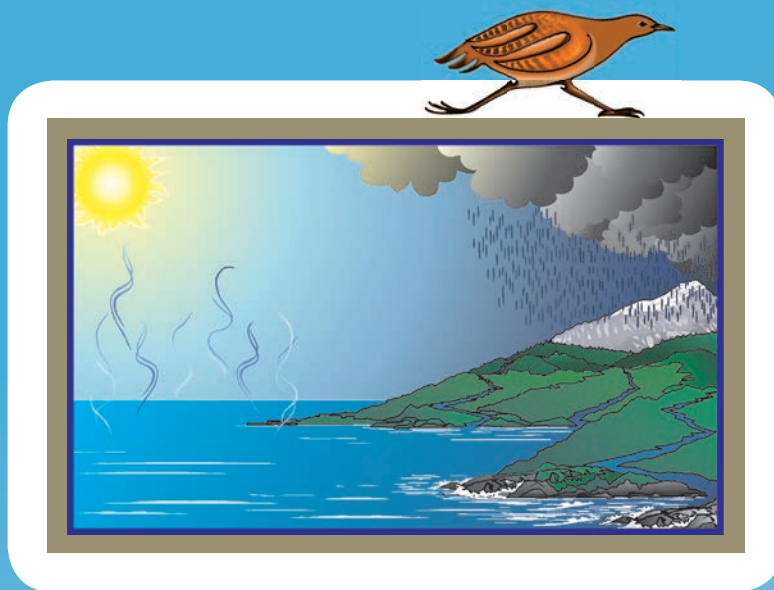
4. *Te ua*
Ka mātaotao te kapua,
ka taumaha haere, ka
heke te ua



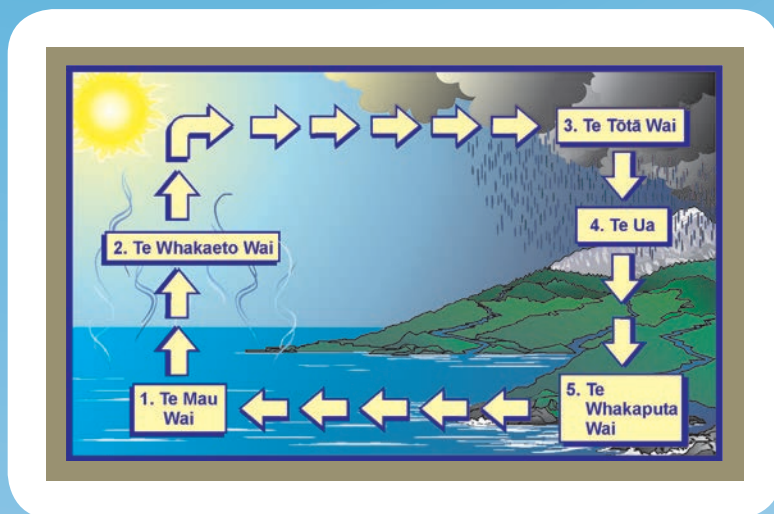
Kei te whārangi 51 he mahere mā te kaituhi.

Rapuhia/tāngia he pikitia, he hoahoa rānei hei āwhina

He uaua ki te whakamārama i te hurihanga wai mā te kupu anake. Nō reira, ka rapu a Kapua i tētahi pikitia hei āwhina. Mā te pikitia me te kupu ka mārama te kaipānui.



Ka tāpiri a Kapua i ngā tapanga iti, ngā nama me ngā perepere ki te pikitia hei tohu i te raupapatanga o te hurihanga wai.



Tuhia te takenga pūtaiao



Ka whakawhānui a Kapua i āna tuhinga tīpoka mō te takenga pūtaiao.

Hei āwhina i te kaipānui:

- Ka tāpiritia ngā tapanga iti me ngā nama
- Ka whakamāramatia te reo-ā-kaupapa
- Ka whakakapia te tuhinga ki tētahi whakaaro whānui hei kai mā te hinengaro

Te Hurihanga Wai

E rima ngā wāhanga o te hurihanga wai: te mau wai, te whakaeto wai, te tōtā wai, te ua, te whakaputa wai. Tirohia te hoahoa e whai ake nei.

1. Te Mau Wai

Kei te moana, kei ngā tōpito kōpaka (ngā papa tio nunui), kei ngā awa me ngā roto te nuinga o te wai e mau ana.

2. Te Whakaeto Wai

Nā te mahana o Tama-nui-te-rā, ka hurihia te wai o runga i te whenua me te moana hei wairehu, arā, he kōpata wai tino iti e rere ana i roto i te hau.

3. Te Tōtā Wai

Ka piki ake ngā wairehu, ka mātaotao haere, ā, ka hurihia anō hei wai i roto i ngā kapua.

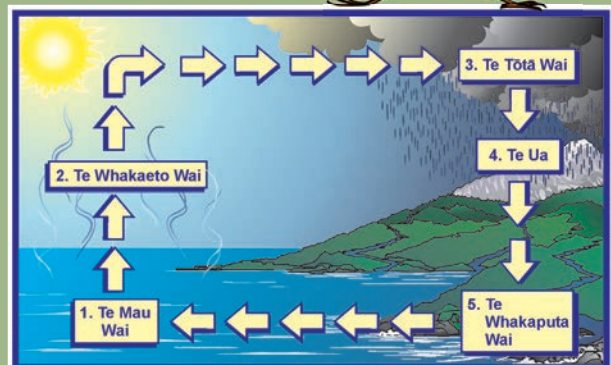
4. Te Ua

Ka puhia ake ngā kapua e te hau, ka mātaotao haere, ka taumaha haere, ā, ka heke iho te wai hei ua.

5. Te Whakaputa Wai

Ka kohikohi ngā awa i te ua. Ka rere atu ngā awa ki te moana. Ka tīmata anō te hurihanga wai.

Ka huri haere te hurihanga wai hei oranga mō Papa-tū-ā-nuku, hei oranga hoki mō te tangata.



Te tū āhuatanga

Te takenga pūtaiao

Te Takenga Pūtaiao a Kapua



Tirohia ngā wāhanga katoa o te tuhinga a Kapua.

He aha te Ua i Heke ai?

Kua kite tātou i te ua e heke mai ana, engari he aha te ua i heke ai? Mā te hurihanga o te wai, ka heke mai te ua.

Te Hurihanga Wai

E rima ngā wāhanga o te hurihanga wai: te mau wai, te whakaeto wai, te tōtā wai, te ua, te whakaputa wai. Tirohia te hoahoa e whai ake nei.

1. Te Mau Wai

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2. Te Whakaeto Wai

Nā te mahana o Tama-nui-te-rā, ka hurihia te wai o runga i te whenua me te moana hei wairehu, arā, he kōpata wai tino iti e rere ana i roto i te hau.

3. Te Tōtā Wai

Ka piki ake ngā wairehu, ka mātaotao haere, ā, ka hurihia anō hei wai i roto i ngā kapua.

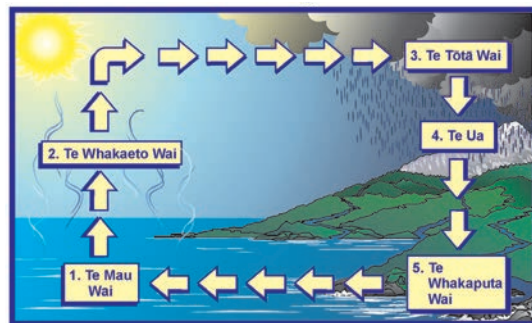
4. Te Ua

Ka puhia ake ngā kapua e te hau, ka mātaotao haere, ka taumaha haere, ā, ka heke iho te wai hei ua.

5. Te Whakaputa Wai

Ka kohikohi ngā awa i te ua. Ka rere atu ngā awa ki te moana. Ka tīmata anō te hurihanga wai.

Ka huri haere te hurihanga wai hei oranga mō Papa-tū-ā-nuku, hei oranga hoki mō te tangata.



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He Taurira Anō

Ko ngā taurira anō hei whakaatu i te whanaketanga o ngā āhuatanga reo, ngā tikanga tuhituhi me ngā kupu mō te takenga pūtaiao.

Ka tirohia te tuhinga, ngā āhuatanga reo, me ngā wāhanga o ēnei taurira tuhinga.



He Takenga Pūtaiao hei Taurira

Ka whakawhitiwhiti whakaaro, ka rangahau a Hohepa hei whakautu i te pātai rangahau: He pēhea te pūrama e muramura ai? Tirohia tāna tuhinga takenga pūtaiao.

He Pēhea te Pūrama e Muramura ai?

He mea muramura te pūrama ka whakamahia e te tangata kia taea ai te kite i roto i te pōuri. He pēhea te pūrama e muramura ai? Mā te rere o te iahiko te pūrama e muramura ai.

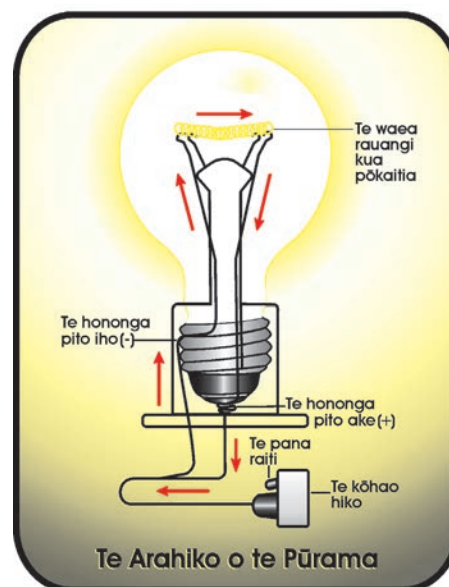
Tirohia te hoahoa o te pūrama e whai ake nei. Kia pēhia te pana raiti, ka honoa te arahiko. Ka rere te iahiko mai i te kōhao hiko ki te hononga pito iho (-), ki te waea rauangi, ki te hononga pito ake (+), ā, ka rere haere te iahiko i te arahiko huri noa, huri noa. Kia tae te iahiko ki te waea rauangi kua pōkaitia, ka wera haere te waea rauangi. Kua hangaia te waea rauangi i te konganuku 'tungsten', ā, ahakoa te wera, ka muramura, kāore e tahuna noa. Nō reira, mā te wera ka muramura te waea rauangi, ā, ka kā mai te raiti.

Ka hanga te uri o Ingarangi, a Tā Joseph Swan, i tētahi pūrama i te tau 1878. Whai muri ake ka hanga a Thomas Edison, he uri nō Amerika, i tētahi atu i te tau 1879. Nō taua wā, tae noa ki tēnei wā, he āhua rite tonu te hanga o tēnei momo pūrama.

Ngā tohutoro

Harris, T. *How Light Bulbs Work*. I tangohia i te 23/06/06, mai i www.howstuffworks.com.

Tomacek, S. M. (2003). *What a Great Idea: Inventions that Changed the World*. New York: Scholastic Inc.



Ngā Āhuatanga Reo



Tirohia ngā āhuatanga reo kua whakamahia e Hohepa i tāna takenga pūtaiao.

Te kupumahi

rere
tae
wera haere
muramura
kā
hanga

Te reo tūhono i te take me te pānga

Mā te rere o te iahiko te pūrama e muramura ai.

Te reo raupapa

Kia pēhia te pana rāiti, ka honoa te arahiko. Kia tae te iahiko ki te waea rauangi kua pōkaitia, ka wera haere te waea rauangi.

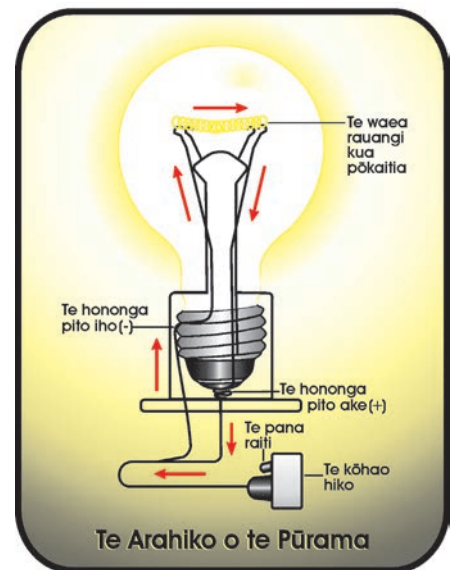
Te reo-ā-kaupapa

iahiko
arahiko
kōhao hiko
hononga pito ake
hononga pito iho
waea rauangi

He Pēhea te Pūrama e Muramura ai?

He mea muramura te pūrama ka whakamahia e te tangata kia taea ai te kite i roto i te pōuri. He pēhea te pūrama e muramura ai? Mā te rere o te iahiko te pūrama e muramura ai.

Tirohia te hoahoa o te pūrama e whai ake nei. Kia pēhia te pana raiti, ka honoa te arahiko. Ka rere te iahiko mai i te kōhao hiko ki te hononga pito iho (-), ki te waea rauangi, ki te hononga pito ake (+), ā, ka rere haere te iahiko i te arahiko huri noa, huri noa. Kia tae te iahiko ki te waea rauangi kua pōkaitia, ka wera haere te waea rauangi. Kua hangaia te waea rauangi i te konganuku 'tungsten', ā, ahakoa te wera, ka muramura, kāore e tahuna noa. Nō reira, mā te wera ka muramura te waea rauangi, ā, ka kā mai te raiti.



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Tirohia te whārangi 8 mō te whakamāramatanga o ēnei āhuatanga reo.



Ngā Wāhanga

Tirohia ngā wāhanga e toru o te takenga pūtaiao a Hohepa. Kua tāpiritia hoki ngā tohutoro hei whakamōhio atu ki te kaipānui nō hea te mātauranga.

Te tapanga

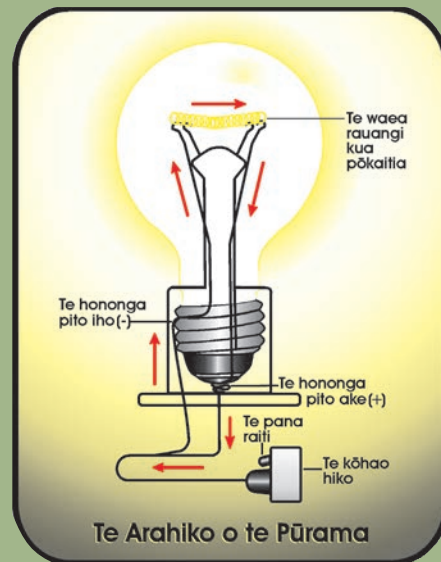
Te tū āhuatanga

Te takenga pūtaiao

He Pēhea te Pūrama e Muramura ai?

He mea muramura te pūrama ka whakamahia e te tangata kia taea ai te kite i roto i te pōuri. He pēhea te pūrama e muramura ai? Mā te rere o te iahiko te pūrama e muramura ai.

Tirohia te hoahoa o te pūrama e whai ake nei. Kia pēhia te pana raiti, ka honoa te arahiko. Ka rere te iahiko mai i te kōhao hiko ki te hononga pito iho (-), ki te waea rauangi, ki te hononga pito ake (+), ā, ka rere haere te iahiko i te arahiko huri noa, huri noa. Kia tae te iahiko ki te waea rauangi kua pōkaitia, ka wera haere te waea rauangi. Kua hangaia te waea rauangi i te konganuku 'tungsten', ā, ahakoa te wera, ka muramura, kāore e tahuna noa. Nō reira, mā te wera ka muramura te waea rauangi, ā, ka kā mai te raiti.



Te Arahiko o te Pūrama

Ka hanga te uri o Ingarangi, a Tā Joseph Swan, i tētahi pūrama i te tau 1878. Whai muri ake ka hanga a Thomas Edison, he uri nō Amerika, i tētahi atu i te tau 1879. Nō taua wā, tae noa ki tēnei wā, he āhua rite tonu te hanga o tēnei momo pūrama.

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Tirohia te whārangi 11 mō te whakamāramatanga o ēnei wāhanga.

He Takenga Pūtaiao hei Taurira

Ka whakawhitiwhiti whakaaro, ka rangahau a Rongomai i te āhuetanga pūtaiao: He aha te take e mahana haere ai te ao? Tirohia tāna tuhinga takenga pūtaiao.

He aha te Take e Mahana Haere ai te Ao?

He tukanga ā-taiao te whakamahanatanga o te ao, engari kei te mahana haere te ao nā te whakaputa ake i ngā haurehu kati mahana (arā, ngā hau parakino) ki te kōhauhau.

He rite te kōhauhau ki tētahi kahu hau e kōpaki ana i a Papa-tū-ā-nuku. E hopukina ana te mahanatanga o Tama-nui-te-rā e ētahi o ngā hau i roto i te kahu haurehu, nō reira e whakamahana ana te kahu hau i te ao. Ki te kore tēnei kahu, ka mātaotao a Papa-tū-ā-nuku, ā, ka mate noa atu ngā koiora.

Otirā, kei te nui haere ngā haurehu kati mahana e whakaputaina ana e te tangata. Hei taurira, kei te nui haere ngā motokā, ā, kei te whakahā ngā motokā i te hauhā (CO₂). Kei te whakaputa hoki ngā wheketere e tahu ana i te waro me te hinu i te hauhā me ērā atu haurehu kati mahana. Kei te piki ake ēnei haurehu kati mahana ki te kōhauhau, ā, kei te nui haere te mahanatanga o Tama-nui-te-rā e hopukina ana. Heoi anō, kei te mahana haere te ao.

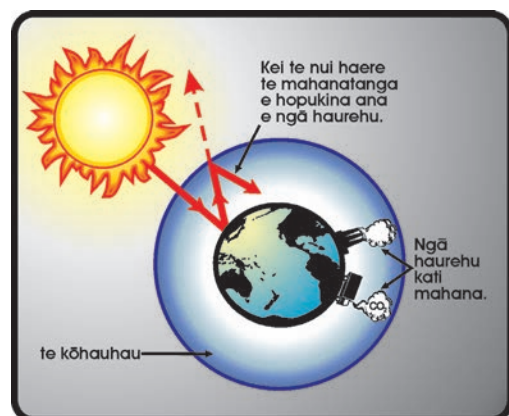
Nā te mahana haere o te ao kei te rewa haere te tio i te Pou Tonga me te Pou Tokerau. Nō reira, kei te piki ake ngā wai moana ki runga i ngā whenua. Kei te maroke haere ētahi whenua, ā, kei te kaha haere ngā āwhā me ngā tūpuhi. Me aro atu tātou katoa kia iti haere ngā haurehu kati mahana e whakaputaina ana, kia ora tonu a Rangī-nui rāua ko Papa-tū-ā-nuku me ā rāua tamariki katoa.

Ngā tohutoro

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Scoones, S. (2001). *Climate Change*. London: Hodder Wayland.



Ngā Āhuatanga Reo

Tirohia ngā āhuatanga reo
kua whakamahia e Rongomai
i tāna takenga pūtaiao.



Te kupumahi

whakaputa
whakamahana
nui haere
tahu
piki
rewa haere
maroke haere
kaha haere
aro
iti haere

Te reo tūhono i te take me te pānga

Nā te mahana haere o te ao kei te rewa haere te tio i te Pou Tonga me te Pou Tokerau.

Te reo raupapa

Kei te piki ake ēnei haurehu kati mahana ki te kōhauhau, ā, kei te nui haere te mahanatanga o Tama-nui-te-rā e hopukina ana.

Te reo-ā-kaupapa

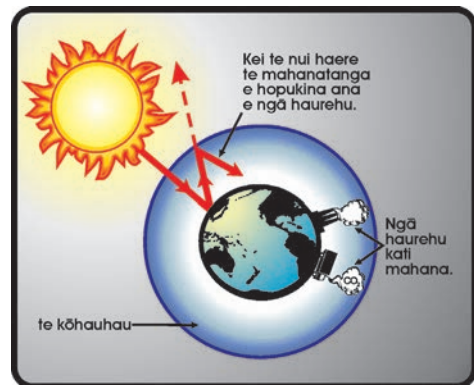
haurehu
haurehu kati mahana
kōhauhau
hauhā

He aha te Take e Mahana Haere ai te Ao?

He tukangā ā-taiao te whakamahanatanga o te ao, engari kei te mahana haere te ao nā te whakaputa ake i ngā haurehu kati mahana (arā, ngā hau parakino) ki te kōhauhau.

He rite te kōhauhau ki tētahi kahu hau e kōpaki ana i a Papa-tū-ā-nuku. E hopukina ana te mahanatanga o Tama-nui-te-rā e ētahi o ngā hau i roto i te kahu haurehu, nō reira e whakamahana ana te kahu hau i te ao. Ki te kore tēnei kahu, ka mātaotao a Papa-tū-ā-nuku, ā, ka mate noa atu ngā koiora.

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Nā te mahana haere o te ao kei te rewa haere te tio i te Pou Tonga me te Pou Tokerau. Nō reira, kei te piki ake ngā wai moana ki runga i ngā whenua. Kei te maroke haere ētahi whenua, ā, kei te kaha haere ngā āwhā me ngā tūpuhi. Me aro atu tātou katoa kia iti haere ngā haurehu kati mahana e whakaputaina ana, kia ora tonu a Rangi-nui rāua ko Papa-tū-ā-nuku me ā rāua tamariki katoa.

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Ngā Wāhanga

Tirohia ngā wāhanga e toru o te takenga pūtaiao a Rongomai. Kua tāpiritia hoki ngā tohutoro hei whakamōhio atu ki te kaipānui nō hea te mātauranga.

Te tapanga

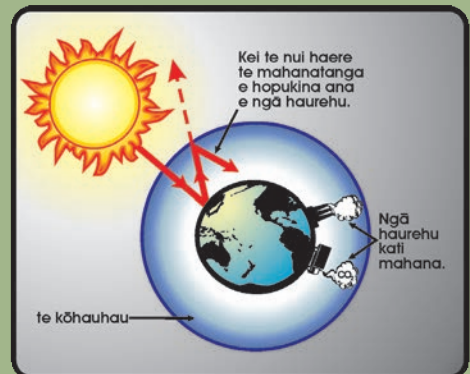
Te tū āhuatanga

He aha te Take e Mahana Haere ai te Ao?

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Te takenga pūtaiao

Nā te mahana haere o te ao kei te rewa haere te tio i te Pou Tonga me te Pou Tokerau. Nō reira, kei te piki ake ngā wai moana ki runga i ngā whenua. Kei te maroke haere ētahi whenua, ā, kei te kaha haere ngā āwhā me ngā tūpuhi. Me aro atu tātou katoa kia iti haere ngā haurehu kati mahana e whakaputaina ana, kia ora tonu a Rangi-nui rāua ko Papa-tū-ā-nuku me ā rāua tamariki katoa.

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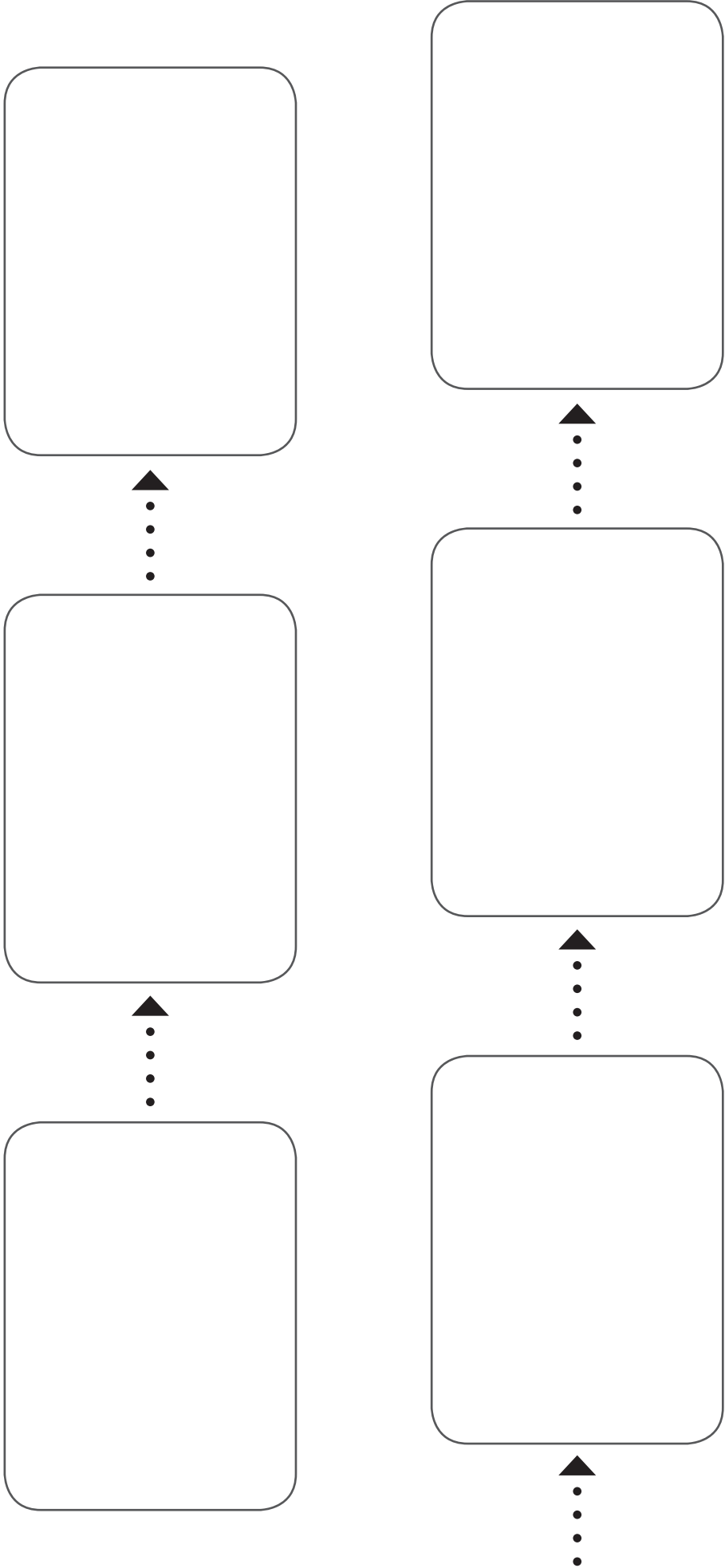
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Tirohia te whārangi 11 mō te whakamāramatanga o ēnei wāhanga.

He Mahere Ārahi i te Tuhituhi



Te Raupapatanga o te Takenga Pūtaiao



Ngā Tauira Tuhinga



He Pēhea te Oro e Rere ai?

He maha ngā oro i te ao nei. He mea mīharo ki te rongō atu, engari he pēhea e taea ai e te tangata te rongō atu i ngā oro o te ao? Mā te hawahawa o tētahi mea, me te hawahawa o te hau, ka rere haere ngā oro katoa. Tirohia tēnei takenga pūtaiao mō te rere o te tangi a te pere.

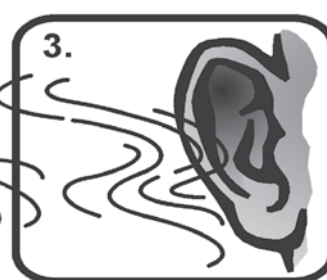
Ko te tangi a te pere



1. Ka tangi te pere, ka hawahawa, arā, ka wiriwiri te pere.



2. Ka hawahawa hoki te hau.



3. Ka rere haere ngā ngaru hawahawa, arā, ngā ngaru oro ki te taringa.



4. Ka hawahawa te tōrino. He rite tonu te tōrino ki te pahū.



5. Ka rangona te tangi a te pere.

Ngā tohutoro

Aperahama, R. (1996). He aha te pūoro? *Te Tautoko* 44, wh. 26.

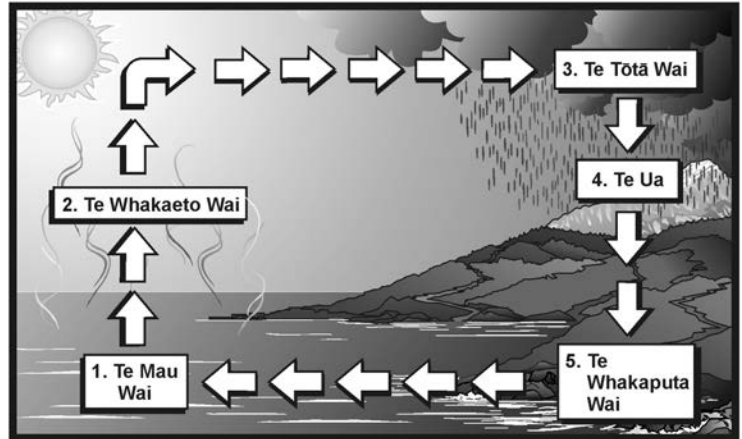
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He aha te Ua i Heke ai?

Kua kite tātou i te ua e heke mai ana, engari he aha te ua i heke ai? Mā te hurihanga o te wai, ka heke mai te ua.

Te Hurihanga Wai

E rima ngā wāhanga o te hurihanga wai: te mau wai, te whakaeto wai, te tōtā wai, te ua, te whakaputa wai. Tirohia te hoahoa e whai ake nei.



1. Te Mau Wai

Kei te moana, kei ngā tōpito kōpaka (ngā papa tio nunui), kei ngā awa me ngā roto te nuinga o te wai e mau ana.

2. Te Whakaeto Wai

Nā te mahana o Tama-nui-te-rā, ka hurihia te wai o runga i te whenua me te moana hei wairehu, arā, he kōpata wai tino iti e rere ana i roto i te hau.

3. Te Tōtā Wai

Ka piki ake ngā wairehu, ka mātaotao haere, ā, ka hurihia anō hei wai i roto i ngā kapua.

4. Te Ua

Ka puhia ake ngā kapua e te hau, ka mātaotao haere, ka taumaha haere, ā, ka heke iho te wai hei ua.

5. Te Whakaputa Wai

Ka kohikohi ngā awa i te ua. Ka rere atu ngā awa ki te moana. Ka tīmata anō te hurihanga wai.

Ka huri haere te hurihanga wai hei oranga mō Papa-tū-ā-nuku, hei oranga hoki mō te tangata.

Ngā tohutoro

Riddell, Te A. (2001). *Wai – Te Mātāpuna o te Ora*. Te Whanganui-a-Tara: Huia Publishers.

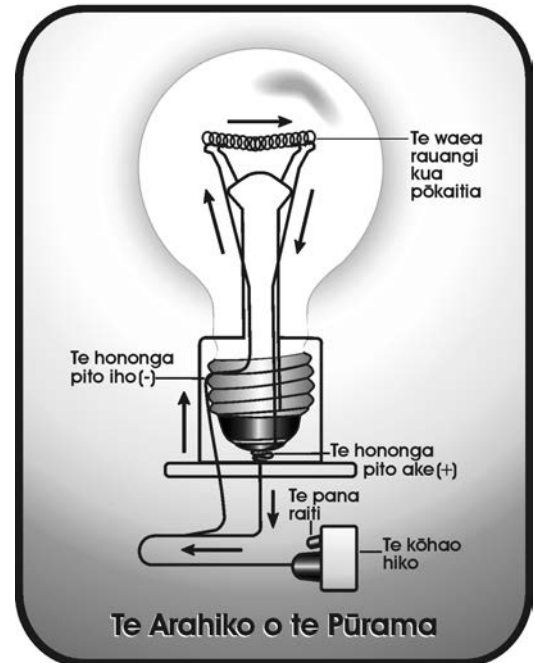
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He Pēhea te Pūrāma e Muramura ai?

He mea muramura te pūrāma ka whakamahia e te tangata kia taea ai te kite i roto i te pōuri. He pēhea te pūrāma e muramura ai? Mā te rere o te iahiko te pūrāma e muramura ai.

Tirohia te hoahoa o te pūrāma e whai ake nei. Kia pēhia te pana raiti, ka honoa te arahiko. Ka rere te iahiko mai i te kōhao hiko ki te hononga pito iho (-), ki te waea rauangi, ki te hononga pito ake (+), ā, ka rere haere te iahiko i te arahiko huri noa, huri noa. Kia tae te iahiko ki te waea rauangi kua pōkaitia, ka wera haere te waea rauangi. Kua hangaia te waea rauangi i te konganuku 'tungsten', ā, ahakoa te wera, ka muramura, kāore e tahuna noa. Nō reira, mā te wera ka muramura te waea rauangi, ā, ka kā mai te raiti.



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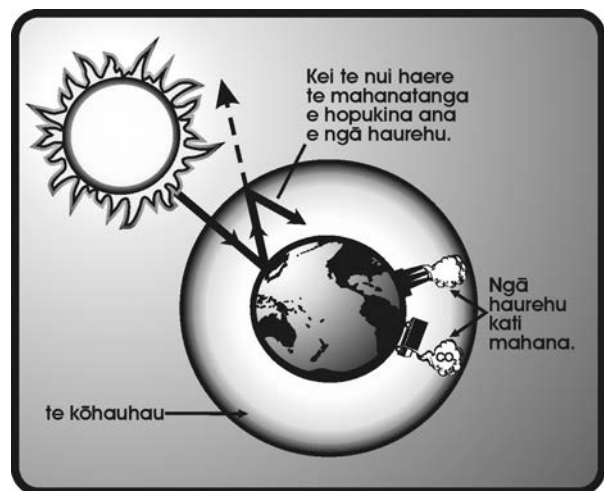
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Nā te mahana haere o te ao kei te rewa haere te tio i te Pou Tonga me te Pou Tokerau. Nō reira, kei te piki ake ngā wai moana ki runga i ngā whenua. Kei te maroke haere ētahi whenua, ā, kei te kaha haere ngā āwhā me ngā tūpuhi. Me aro atu tātou katoa kia iti haere ngā haurehu kati mahana e whakaputaina ana, kia ora tonu a Rangī-nui rāua ko Papa-tū-ā-nuku me ā rāua tamariki katoa.

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Scoones, S. (2001). *Climate Change*. London: Hodder Wayland.

Te Kuputaka

arahiko	He ara e rere ai te iahiko.
āwhā	He hau tino kaha me te ua.*
hauhā	He momo haurehu ka puta i te waha o te tangata, o te kararehe*, arā, te hau e kīia nei CO ₂ .
haurehu kati mahana	Ko ngā hau parakino e whakaparu ana i te kōhauhau, ka hopu hoki i te mahanatanga o Tama-nui-te-rā.
hawahawa	Ki te hawahawa tētahi mea, ka wiriwiri, ka nekeneke katoa taua mea.
iahiko	Ko te rere o te hiko mā tētahi waea.*
kōhao hiko	He wāhi i te pakitara hei whakauru i te purunga hiko o tētahi mīhini kia honoa ki te hiko.
kōhauhau	Ko ngā hau e kōpaki ana i te ao.
kōpata	He wai ka maringi iti mai.*
pahū	He taputapu whakatangitangi ka patua ki te ringa, ki te rākau rānei.*
pūrama	Ko te wāhanga karāhe o te rama, mā te hono ki te hiko e kā mai ai.*
rewa	Ki te rewa tētahi mea, ka tere ki runga i te mata o te wai.*
tōpito kōpaka	Ngā papa tio nunui rawa atu kei te tōpito raki me te tōpito tonga o te Ao.
tōrino	He kiri angiangi ka hawahawa ki roto i te taringa kia rangona pai ai ngā oro kei te rere.
tōtā wai	Ki te tōtā te wairehu, ka huri hei wai.
tuhinga tipoka	Ko ngā tuhinga poto hei whakawhāiti i ngā whakaaro, i ngā mātauranga rānei.
waea rauangi	He waea tino tūpuhi i roto i te pūrama. Kia whakawerahia te waea rauangi, ka muramura.
wairehu	He kōpata wai tino iti rawa atu e rere ana i roto i te hau.
waro	He kōhatu pango mai i te puku o te whenua, hei tahu ahi.*
whakaeto wai	Ki te whakaeto te wai, ka huri hei wairehu.

*Te Tāhuhu o te Mātauranga. (2006). *Tirohia Kimihia: He Kete Wherawhera*. Te Whanganui-a-Tara: Huia Te Manu Tuku Kōrero.

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Te Matapaki

Mā te matapaki, ka whanake
ngā pūkenga tuhituhi.

Ngā Mātāpono me ngā Pūtake Whānui mō te Matapaki

E whā ngā mātāpono hei ārahi i te kaituhi me ngā tāngata āwhina ki te matapaki i āna tuhinga:

- Whakarongo ki te kaituhi.
- Ākina, tautokohia te kaituhi.
- Arahina te kaituhi ki te ara e tika ana mōna.
- E tika ana kia whai wāhi ngā tāngata āwhina ki te āwhina i te kaituhi, kaua te tuhinga.

E whā ngā pūtake whānui o te matapaki:

- Hei akiaki i te kaituhi kia whakaaturia ōna mōhiotanga kē, hei whai māramatanga hoki mō ngā mahi kei mua i a ia.
- Kia rangona e te kaituhi ngā whakawhitinga kōrero a tangata kē, kia mōhio ai ia i ngā mea kāore anō kia mau i a rātou.
- Hei āwhina i te kaituhi kia mārāma ia ki ngā āhuatanga tuhituhi kua tutuki i a ia i tāna tuhinga.
- Kia whakamōhio atu te kaituhi i ōna mōhiotanga ki te kaiako, mā tēnā te kaiako ka āwhina i a ia kia mau ngā momo rautaki tuhituhi e tika ana.

I te tuatahi, whakatauria te aronga, te huarahi me te momo matapaki.

Ngā Huarahi Matapaki

Ko ēnei ētahi o ngā huarahi pai mō te matapaki i te tuhinga:

- Takitahi
- Takirua me tētahi hoa
- Takirua me te kaiako
- Takitini

Ngā Momo Matapaki

He whakamārama i ngā pūtake o ngā momo matapaki

Matapaki mō te Kaupapa

E hāngai ana tēnei matapaki ki ngā mātauranga e hiahia ana te kaituhi kia mau i te kaupānui. Hei tauira, i te tuhinga takenga pūtaiao ka tuhi pea te kaituhi mō te take i pērā ai tētahi tū āhuatanga.

Ngā Pātai Ārahi

Ētahi pātai hei ārahi i ngā momo matapaki

- He aha te pūtake o te tuhinga?
- Mā wai te tuhinga?
- He aha tētahi tapanga mō te tuhinga?
- He aha ōu whakaaro matua mō te tuhinga?
- He aha ngā whakaaro ka tautoko i ōu whakaaro matua?
- Whakamāramatia mai ōu whakaaro.
- He mōhiotanga anō me rapu?
- He pātai atu anō āu mō te tuhinga?

Matapaki mō te Momo Tuhinga

E hāngai ana tēnei matapaki ki te momo tuhinga e tika ana mō ngā mātauranga ka whakaaturia. Hei tauira, i te tuhinga taki whaiaro ka ahu mai te hiahia i te kaituhi ki te tuhi mō tētahi wheako whaiaro ōna, ā, ka raupapahia tērā wheako i te taki.

- He aha te momo tuhinga e tika ana?
- He aha te tino take o tāu tuhinga e hiahia ana koe kia mau i te kaipānui?
- Kua whakaritea ngā whakaaro matua me ngā whakaaro tautoko?
- He tika rānei te raupapatanga o ngā mahi?
- Kua whai whakaaro ki ngā mātauranga katoa e tika ana mō te tuhinga?
- Ka aha i nāianei?

Matapaki mō ngā Momo Rautaki Tuhituhi

E hāngai ana tēnei matapaki ki ngā rautaki tuhituhi kua whakamahia e te kaituhi i a ia e tuhituhi ana, ā, nā te aha hoki i pērā ai. Ko te pūtake o tēnei matapaki ko te āwhina i te kaituhi ki te tāutu i ngā rautaki kua whakamahia kē e ia, ki te whakawhanake hoki i tāna āheinga ki te whakamahi i ētahi atu rautaki tuhituhi.

- He aha ngā rautaki tuhituhi i whakamahia e koe ki te timata i tāu tuhinga?
- He aha ētahi raruraru i puta i a koe e tuhi ana? I ahatia ērā raruraru e koe kia oti pai ai te mahi tuhituhi? He aha māku hei āwhina i a koe?
- I pēhea tāu kōwhiringa pūtake mō tāu tuhinga?
- I muri mai i te kōwhiringa pūtake i ngāwari noa iho te kimi whakaaro hei tautoko i taua pūtake?
- Kua rerekē pēhea nei āu rautaki tuhituhi?
- Kua kite au i ētahi kupu/rerenga kua whakarerekētia e koe. I pēhea tāu whakatau kia pērā ai te whakarerekē?

Matapaki mō te Arotake Tuhinga

He matapaki tēnei hei āwhina i te kaituhi ki te pānui i āna ake tuhinga mai i te tirohanga o te hunga pānui. Ka tuku pātai te kaituhi ki a ia anō mō te mārāmatanga, te painga me te tutukitanga o ana tuhinga ki te kaipānui.

- He aha ōu whakaaro mō te tuhinga?
- He kupu pai ake i ērā kua whakamahia? He kupu pai ake kia mau ai i te kaipānui te pānga/iho o te tuhinga?
- Kua tuhia katoatia ngā mātauranga e hiahia ana koe kia mau i te kaipānui?
- E tika ana te reo kua whakamahia i te tuhinga kia pai ai te kawenga o ngā whakaaro?
- He pai te raupapatanga o ōu whakaaro?
- Me whai āwhina te kaipānui kia mārāma pai ai ia ki āu tuhinga?

Matapaki mō te Whakatika Tuhinga

E hāngai ana tēnei matapaki ki ngā āhuatanga kua whakatikaina kē e te kaituhi, ki te whakatika hoki i ngā tikanga tuhituhi pēnei me te tātaki kupu, te kārawarawatanga me te takotoranga o ngā kupu.

- E tika ana te ia o te tuhinga?
- E tika ana te noho o ngā tohutō?
- He tika te whakatakotoranga o ngā rerenga tuhituhi?
- Kua tuhia e koe ngā kārawarawatanga i ngā wā, i ngā wāhi hoki e tika ana?
- Ko tēnei te tino kōunga o āu mahi tuhituhi?
- Kua tutuki i a koe tētahi o āu whāinga ako? Ka aro tāua ki ēhea o ngā whāinga ako i nāianei?

Matapaki mō te Whakaputa Tuhinga

E hāngai ana tēnei matapaki ki ngā momo whakatau e tika ana mō te whakaputa, arā, te tā tuhinga. Hei tauira, mā tēnei matapaki ka whakatauria mehemea ka tuhituhi mā te ringa, mā te rorohiko rānei me te whiriwhiri i ngā pikitia e tika ana mō te tuhinga.

- He aha te momo hanga o te tuhinga kua tā – he mahere, he pukapuka, he aha rānei?
- He aha tētahi ara kia tutuki pai ai te tā i te tuhinga?
- Ka tuhituhi koe mā te ringa, mā te rorohiko rānei?
- Mā wai e tā – māu, mā te kaiako, mā tētahi kaiāwhina rānei?
- He aha ētahi pikitia e pai ana?
- Ka meatia he pikitia kua tuhia ā-ringa, ā-rorohiko, he whakaahua rānei?

Te Tukanga Tuhituhi

Me toro te kaituhi ki mua, ki muri ki ngā wāhanga katoa kia pai ai te takoto o te tuhinga.

Te Whakarite Te whakatau, te whakarite whakaaro

- Tāutuhia te pūtake me ngā kaipānui
- Whakatauria te momo tuhinga
- Whiriwhiria tētahi tapanga kia hāngai pū ōu whakaaro ki te kaupapa
- Kohia ōu whakaaro
- Rapuhia te mātauranga
- Whakaritea ngā whakaaro matua me ngā whakaaro tautoko mō ngā wāhanga o te tuhinga

Te Whakatakoto Te waihanga tuhinga tuatahi

- Raupapahia ōu whakaaro me ngā mātauranga
- Waihangatia tāu tuhinga kia kitea te hononga o ngā whakaaro matua me ngā whakaaro tautoko
- I a koe e tuhi ana, me whakaaro hoki ki ētahi pātai e pā ana ki te pūtake o te tuhinga me ōna pānga

Te Whakamārama Te arotake, te whakamārama ake

- Pānuihia, ā, arotakengia ōu whakaaro me ngā mātauranga
- Toro atu ki tētahi/ētahi atu kia whai whakaaro arotake mai ki āu tuhinga, ā, whakamanahia ngā kōrero āwhina a te kaiarotake
- Pānuihia anō āu tuhinga kia arotakengia te pānga o te tuhinga ki te kaipānui
- Arotakengia ō tuhinga mā ēnei ara:
 - tīnīhia te raupapatanga o ngā whakaaro, o ngā kupu rānei
 - tīnīhia ngā kupu, ngā rerenga tuhituhi rānei kia pai ake te takoto o te tuhinga
 - tāpiritia atu he mātauranga anō

Te Whakatika Te whakatikatika i te reo

- Pānuihia anō tāu tuhinga
- Whakatikaina te reo o tāu tuhinga – te tātaki tika o ngā kupu, ngā tohutō, te wetewete reo me ngā kārawarawatanga

Te Whakaputa Te tā tuhinga

- Tāngia tāu tuhinga kia ngāwari noa iho te pānui, kia ātaahua hoki te takoto mā te kaipānui

Tuku atu, tuku mai Te tuku atu hei pānuitanga

- Tukuna tāu tuhinga kia pānuihia e tētahi/ētahi atu