Kia Pai Tō Haere

# Pāngarau

**Hei horopaki pea mō te kaupapa:** Kei te katoa te kawenga kia noho haumaru\* te whānau i runga i tētahi haerenga. Kia haumaru te haere.

\*Haumaru -ā-wairua, ā-tinana, ā-hinengaro hoki.

**Āhuatanga:** tūnga me te whakaangatanga - ahunga me ngā taunga.

|  |  |
| --- | --- |
| Ngā putanga ako tauwhāiti – whāinga paetae  achievement objective | Aromatawai:  ngā putanga ako koronga/ngā whāinga akoranga |
| Ka tāea e te ākonga te:  **Taumata 1**  Te Wāhi me te Ahunga  Ka whai, ka hoatu hoki i ngā tohutohu mō te nekeneke e whai wāhi mai ana:  • te tawhiti;  • te ahunga;  • te hurihanga (hurihanga  0, 1–4, 1–2, 3–4, 1, 11–4, 11–2 …).  Ka whakamārama i te wāhi noho o tētahi mea.  **Taumata 2**  Te Wāhi me te Ahunga  Ka hanga, ka whakamahi mahere māmā:  • ka whakaatu taunga;  • ka whakaatu ahunga;  • ka whakamārama  huarahi;  • ka whakamārama  tirohanga.  Ka whakamārama taunga, ahunga hoki o ngā wāhi matua o te kura, te tāone me te rohe.  **Taumata 3**  Te Wāhi me te Ahunga  Ka hanga, ka whakamahi pūnaha ki te:  • whakaatu taunga;  • whakaatu ahunga;  • whakamārama huarahi.  Ka whakamahi i ngā tōpito matua ki te whakamārama taunga, ahunga hoki  **Taumata 4**  Te Wāhi me te Ahunga  Ka whakaatu, ka whakamārama, ka whakamahi i te wāhi noho (taunga) o tētahi mea, me te ahunga:  • ngā tōpito;  • ngā koki o te kāpehu;  • ngā āhuatanga o te taiao;  • te tukutuku (takirua  raupapa);  • te mahere. | **Taumata 1**  Te whakamahi i te reo ā-wāhi hei whakaahua me pēhea te tae atu ki tētahi wāhi mai i tētahi wāhi.  Te tuku me te whai tohutohu mā te whakamahi i te reo ā-wāhi, ā-ahunga hoki; hei tauira, raro, whiti, runga, mauī, matau, huri hauwhā, huri haurua, ki runga, ki raro.  Te whakarōpū i ngā tūtohu me ngā tohu.  Te whakaahua i ngā nekenekehanga ki tō rātou ake reo; hei tauira, whakamua, whakamuri, hīkoi, haurua, aha atu, aha atu.  Te whakatau tata i te roa o te nekeneke mā ngā waeine aro kē.  **Taumata 2**  Te tuku me te whai tohutohu mā te whakamahi mauī, matau, runga, raro, raki, tonga, rāwhiti me te uru.  Te tātuhi me te whai i tētahi ara i runga tukutuku hei whakaatu i te huarahi e tae atu koe mai i A ki B.  Te tautohu i ngā tūtohu whenua me ngā āhuatanga mai i tētahi wāhi i runga mahere whenua.  Te whakaahua i ngā ara i waenga i ngā wāhi mahere.  Te tapa me te whai i ngā tohu whakamārama i runga mahere whenua.  Te waihanga i ngā tohutohu nekenekehanga, ahunga hoki kia haere atu mai i A ki B.  Te whakamahi i ngā ahunga kāpehu hei whakaahua me pēhea te kimi i ētahi tūtohu whenua.  **Taumata 3**  Te whakamahi i ngā taunga hei whakaahua i te tauwāhi o tētahi mea.  Te tuku me te whai tohutohu mō ngā huringa (mauī me te matau) me ngā ahunga kāpehu.  Te tuku me te whai tohutohu mō te tawhiti mā te whakamāori i ngā āwhata ngāwari.  Te tātuhi me te whakamāori i ngā mahere āwhata ngāwari.  **Taumata 4**  Te whakamahi taunga tōrunga, tōraro hoki hei whakaahua i te tauwāhi o tētahi mea.  Te whakatutuki tātaitanga hei whakawhiti i ngā mita ki te kiromita, i ngā kiromita ki te mita hoki, mō te tawhiti i haerehia.  Te whakaoti rapanga whakarea nekenekehanga mā te whakamahi rautaki pūrua me te haurua.  Te kōrero i ngā meka whakarea e mōhiotia ana hei whakaoti rapanga whakarea mahere, tauwāhi hoki. |

## Raupapa mahi: ngā koronga akoranga e taea ana me ngā wheako akoranga

Kei tō kura āna ake whakaritenga mō te whakawhanake koronga akoranga. Me whakataukī ngā koronga akoranga e hāngai pai ana ki ngā āheinga o ō ākonga.

**LI: Tautuhia te reo o te tūnga me te ahunga e whakamahia ana kia tae haumaru ai mai i tētahi wāhi ki tētahi [Hangangatahi]**

LE: Whakarārangitia mai te reo tūnga me te ahunga. Whakamaharatia ngā wā i whakamahia e koe te reo tūnga me te ahunga kia tae haumaru ai i tētahi wāhi ki tētahi. Whakamahia te reo tūnga me te ahunga hei ārahi i ngā nekehanga o tētahi tangata, tētahi mea rānei puta noa i te akomanga/papa tākaro. Tākarohia ngā kēmu mā te whakamahi i te reo tūnga me te ahunga. Hei tauira, E kī ana a Haimona me...

**LI: Whakaahuahia mā te whakamahi i te reo o te tūnga me te ahunga kia tae haumaru ai koe mai i tētahi wāhi ki tētahi [Hangangamaha]**

LE: Whakamaharatia tētahi wā i whakamahia e koe, tō whānau rānei i te reo tūnga me te ahunga kia tae haumaru mai i tētahi wāhi ki tētahi.

**LI: Whakaraupapa nekehanga mā te whakamahi i te reo o te tūnga me te ahunga kia tae haumaru ai mai i tētahi wāhi ki tētahi [Pānga]**

LE: Tirohia ngā pikitia, atahanga o ngā nekehanga o tētahi mea, tangata rānei e neke haumaru mai ana i tētahi wāhi ki tētahi. Whakaraupapatia, whakarārangitia rānei ngā atahanga, e whakakaupapa ana i ia upane mā ngā tohutohu mō te tunga me te ahunga. Whakamāramahia he aha te whakaraupapa pēnei i ngā upane e āwhina nei kia haumaru te haerenga

**LI: Whakarōpūtia te reo o te tūnga me te ahunga kia tae haumaru ai mai i tētahi wāhi ki tētahi [Pānga]**

LE: Ohia manomanotia ngā kupu/tikanga rerekē hei tautuhi i te tūnga me te ahunga. Whakatakotohia ia whakaaro ki tētahi pepa rerekē ka whakatōpū haere. Whakamāramahia mai te take he aha koe i whakatikatika pēnei mai i ngā kupu rerekē.

**LI: Whakahāngaitia te reo o te tūnga me te ahunga e āhei ai te tangata te tae haumaru mai i tētahi wāhi ki tētahi [Pānga]**

LE: Mahi Pū Matatini

Whakamōhiotia atu ngā rīrapa hei hōpara i ngā ariā o ngā huri ½ me te ¼, me te huri matau me te mauī. Kimihia te huarahi poto, roa hoki. Whakatūhia mai he papa tauārai māmā, rīrapa rānei i roto i tētahi wāhi haumaru. Waihangatia ngā rīrapa i roto i te akomanga mā ngā mea tonu o te akomanga me ngā taputapu whare; waihangatia he rīrapa i roto papa tākaro.

[pepamahi rīrapa](http://www.allkidsnetwork.com/mazes/)

[ngā rīrapa](http://www.mathsisfun.com/games/mazes.html)

Me mahi takirua ngā ākonga ki te tautuhi i tētahi ara i roto i te kura; hei tauira, mai i te akomanga ki te tari o te kura. Me whakamahi rātau i te reo tūnga me te ahunga hei whakaahua me te whai i te ara, ka huahua i te ara.

Me mahi takirua ki te ārahi i tētahi tangata i roto i tētahi rīrapa, huringa rānei mā te whakamahi i te reo tūnga me te ahunga. Me āraiwhatu te mahi. Whakamahia ngā rōpū ākonga āraiwhatu ki te ngōki haere i te papa e urupare ana ki ngā tohutohu (e whakamahi ana i te reo tūnga me te ahunga) a tētahi hoa.

Whakaotihia te mahinga rīrapa i runga mapi, mā tētahi ākonga e tuku tohutohu, ā, mā tētahi atu e tā te ara i runga i te mapi.

**LI: Waihanga rauemi mā te whakamahi reo tūnga me te ahunga hei āwhina i tētahi e tata ana ki a koe kia tae haumaru ai mai i tētahi wāhi ki tētahi atu [Tangohanga Roa Ake]**

LE: Whakamaheretia ngā ara mō ngā tāngata kia tae atu ki tētahi wāhi mai i tētahi atu i roto i te wāhi o te Matatini, hei tauira, mai i te tūnga waka ki te wāhi kaumātua, mai i te wāhi atamira ki te wāhi e whakarite ai ngā kaihaka. Hopukina ā-tuhi, ā-waha hoki.

[Te Matatini](https://tematatini.co.nz/)

Hoahoatia me te waihanga tohu haumaru mō ngā wāhi mōrearea, arahīkoi tūnga waka, ngā arapiki mania i te taiwhanga hākinakina, ngā kuhunga, putanga hoki.

I roto rōpū iti, waihangatia he tauira ahunga-3 o te wāhi Mutunga Mai, whakaarohia ngā ara hīkoi me te neke haumaru mō ngā tāngata me ngā waka, arā, ngā waka tūroro, waka pirihimana

Waihangatia tāu ake mahere wāhi, e whakaatu ana i ngā tōpito katoa, ngā aratika, ngā pūmate me ngā wāhi tīmata me te mutunga.

Hōparatia ngā ahunga kei te mahere wāhi – raki, tonga, rāwhiti, hauauru – ka whakaatu ki tā rātau mahere wāhi hei kī ki tētahi mātiti, mā tētahikapehu rānei. Ngā mahinga whaitake mō te whakangungu ahunga kapehu he: ‘Pirate Island’ mai i Figure It Out: Geometry, Taumata 2–3, whārangi 20 (whakarerekēhia te kaupapa kaitiora ki tētahi kaupapa eke paihikara).

[How to use a compass (NZ Mountain Safety Council)](https://www.youtube.com/watch?v=FfE3shVPyZs)

[Chippy’s Journeys](http://nrich.maths.org/2813)

[Ngā ahunga kapehu me ngā aronga](http://www.primaryresources.co.uk/maths/pdfs/Mazes.pdf).

Whakamahia ngā mahere wāhi o mua me nāianei, me ngā mahere rori hei hōpara i te tuhi me te whakamāori i ngā mahere māmā, me te tautuhi wāhi mā te whakamahi arohanga me ngā tohu mātiti.

## Uiui ākonga - te haere ki te pū o matatini

**Tō mahi: waihanga tohutohu ahunga hei āwhina i tētahi e tata ana ki a koe kia tae haumaru atu, mai hoki i te Pū o Matatini.**

WhakamahiaWhakaaro, whakatakirua, tuari hei whakaaroaro me te matapaki i ngā pūtake e whakamahi mahere tātau. Tuhia ngā whakaaro ki tētahimahere ariā ka tāpiri haere atu pērā anō i ētahi atu mahi mahere.

Whakamahia te kōwaeNgā Mahere kei te paetukutuku TKI he whakawhānui ake i ngā mahi mō te pānui, te whai tohutohu me te whakamahere haerenga ki ngā mahere māmā.

[Ngā Mahere](http://www.nzmaths.co.nz/node/823)

Whakamahia ngā Mahere Huarahi o Aotearoa ki te kimi kei hea ngā wāhi e haere mai ana ia rōpū ki te Matatini, tāpiri tohu hei whakaatu i te wāhi. Matapaehia ngā ara poto ake, roa ake hoki mai i reira ki te wāhi. Whakamātauhia ēnei matapae mā te whakamahi i ngā mahere google me ētahi atu momo pūrere Navman.

Ohia manomano mā hea haere ai ki te Matatini (hei tauira, mā runga motokā, wēne, tereina, pahi). Hei akomanga, hōparahia ngā nōhanga rerekē e taea ana i roto i te motokā. (Ka taea e koe te whakaatu i ētahi mea rerekē i ngā motokā e rua, e toru rānei, hei tauira, motokā whānau, teihana wākena, waka kawe tāngata.)

Huahuatia ngā nōhanga rerekē ka tautuhi katoa mai i tēnā me tēnā mā te whakamahi i tētahi pūnaha waehere ka whakaratoa e koe, pēnei i te K = kaitaraiwa, PM = pāhihi i mua, PMT = pāhihi i muri kaitaraiwa, PMPM = pāhihi i muri pāhihi i mua, ka taea rānei e ngā ākonga te waihanga mai i tā rātau ake pūnaha.

Whakamātautauria ngā ariā o te wā me te tawhiti. Tautuhia ngā ara rerekē, ohia manomano kawenga kē mō te haere ki te Matatini (hei tauira, mā runga paihikara, te rere, te haere pakiture), te tautuhi rānei i tētahi ara kē e ōrite ana ki taua tawhiti anō. Whakamātautau me te whakaaroaro, "He poto ake, roa ake rānei te haere mā ēnei ara kē? He aha koe i mōhio ai?

Ohia manomanotia ngā pūmate, ngā wāhi kaingākau, ngā whakawhiti huarahi, ngā rama huarahi, ngā piriti, nga aha atu, ngā aha atu, ka kitea ina haere ana mā tētahi ara ki te wāhi. I ngā mahere whenua o te rohe, ka whakatakoto tohu ngā ākonga mō ēnei āhuatanga katoa, me te waihanga i tētahi kī mō te mahere whenua.

Whakamahiwhakaaro, whakatakirua, tuari, whakangungu me te raparongoā i tēnei whakamātautau taunga

[Ngā Taunga](http://nrich.maths.org/2584)

## Ngā rauemi

### Tā

Te Reo Pāngarau

Rauemi Poutama Tau

Te Rārangitanga Figure it Out

He Pūkete Aromatawai Pāngarau

Pipi Pāngarau

### Iahiko

[NZMaths: Rauemi Maori](https://nzmaths.co.nz/rauemi-reo)

## Aromatawai mō te ako: kaiako/aropā/whaiaro

Mā ngā kaiako e āta whakaputa ngā wheako akoranga i runga ake ka whakamahia hei aromatawai mō ngā akoranga puta noa i te wāhanga. Ka taea ēnei te tuhi i roto i ngā kōpaki/pūnaha whakahaerenga kura.

**He tauira rōpū aromatawai whaiaro**

Mā ngā kaiako e waehere ki te tīwae tuatahi o ngā tohu ka whakamahia e rātau ki roto i ngā kura hei aromatawai.

Tērā pea ki ngā taumata, ngā aratohu MOE, ngā whakaritenga ā-roto rānei. Ka taea te tuhi i te tukutuku ki ngā whāinga paetae, te tuhi anō hei whakaritenga angitu mō ngā tamariki e ai ki te hiahia o te kura.

Miramiratia ngā kīanga tōtika i ia upane. He tauira tēnei o tētahi ahu kotahi anake.

**Tauira: Te Whakamahi i te reo tūnga me te ahunga.**

|  |  |
| --- | --- |
| Tangohanga Roa Ake | Whakamahia e au ngā rautaki maha hei whakamahi i te reo tūnga me te ahunga kia tae haumaru ai mai i tētahi wāhi ki tētahi atu, ā, e mōhio ana mō te wā me te take o te whakamahi.  Ka taea e au te whakaako i ētahi atu ki te whakamahi i te reo tūnga me te ahunga kia tae haumaru ai i tētahi wāhi ki tētahi.  He tauira au mō ētahi atu mō te whakamahi i te reo tūnga me te ahunga kia tae haumaru ai i tētahi wāhi ki tētahi.  Rapu whakahokinga kōrero au mō te whakapai ake i taku whakamahi i te reo tūnga me te ahunga kia tae haumaru ai i tētahi wāhi ki tētahi. |
| Pānga | Whakamahia e au ngā rautaki maha hei whakamahi i te reo tūnga me te ahunga kia tae haumaru ai mai i tētahi wāhi ki tētahi atu, ā, e mōhio ana mō te wā me te take o te whakamahi. |
| Hangangamaha | Whakamahia e au ngā rautaki maha hei whakamahi i te reo tūnga me te ahunga kia tae haumaru ai i tētahi wāhi ki tētahi atu, ā, engari kāore au i te āta mōhio mō te wā me te take o te whakamahi. |
| Hangangatahi | Ka taea e au te whakamahi i te reo tūnga me te ahunga kia tae haumaru ai i tētahi wāhi mēnā ka tohuākina , ka tohutohutia rānei. |
| Hangangatōmua | E hiahia āwhina ki te whakamahi i te reo tūnga me te ahunga kia tae haumaru ai i tētahi wāhi ki tētahi. |