

Pepa Aroturuki Tahī

Tirotiro Nōhanga - Ka tautoko pēhea nei ō tātou kōawa i te koiora?

Ingoa wāhi: _____ Rōpū:



He aha te nōhanga? _____



Tirotiro haere huri noa i a koe. Whakamahia ngā tūtohi i raro nei hei kimi i tētahi kupu whakaahua e hāngai pai ana ki te momo nōhanga i te wāhi o tō kōawa. Kua wehewehe ngā tūtohi hei Nōhanga Kōawa, hei Nōhanga Tahataha.

1. Tirotiro Nōhanga Kōawa

Āhuatanga Nōhanga	He rawe tapeke 8	He pai tapeke 6	He āhua pai tapeke 4	Koretake tapeke 2	Tō otinga
He haumarū, he uwhiuwhi hoki, mō te koiora o te kōawa?	Neke atu i te ½ hei uwhiuwhi, he pororākau, he kōhatu, he tipu e tautau ana	E ½ o te kōawa e uwhiuwhi ana	E iti iho ana i te ⅓ o te kōawa he uwhiuwhi	Tino iti, karekau rānei he uwhiuwhi, he tipu e tautau ana i te kōawa	
Pāpaku, kōpua, pikopiko, rēre. Ka rerekē te rere o te kōawa?	He nui ngā momo rerenga, ngā momo kōpua me te hōhonu.	He āhua rerekē	Paku te rerekē	Rite tonu te rere, me te hōhonu	
Waipara i te whaiawa.	E ¼ o te whaiawa he waipara hungahunga	E ¼ ki te ½ o te whaiawa he waipara hungahunga	E ½ ki te ¾ o te whaiawa he waipara	Neke atu i te ¾ o te whaiawa he waipara	

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2. Nōhanga Tahataha

Āhuratanga Nōhanga	He rawe tapeke 8	He pai tapeke 6	He āhua pai tapeke 4	Koretake tapeke 2	Tō otinga	
					Taha Mauī	Taha Matau
Otaota i te tahataha. E haumarua ana ngā tahataha?	Uwhiuwhi ana ngā tahataha ki ngā rākau me ngā mauwha	Neke atu i te $\frac{3}{4}$ e uwhiuwhi ana ki ngā rākau me ngā mauwha	Neke atu i te $\frac{1}{2}$ e uwhiuwhi ana	E iti iho i te $\frac{1}{2}$ e uwhiuwhi ana		
E tū kaha ana ngā tahataha?	Karekau he horo	He wāhi paku e horo ana	He nui ngā wāhi e horo ana	Tino papahoro ana ngā tahataha		
Tuwhera ana te kōawa ki te whenua?	Nui ngā paenga otaota e 30 mita te whānui	He paenga otaota e 20 mita te whānui	He paenga whāiti e 5-10 mita te whānui wide	Māmore ana i te pātītī manene pērā i te mauti		

Tāpirihia ō otinga katoa	Tapeke
Nōhanga kōawa	
Nōhanga taha mauī	
Nōhanga taha matau	
TAPEKE	

Whakataua	
Otinga 18 – 30	Koretake
Otinga 31-42	Āhua pai
Otinga 43 - 59	Pai
Otinga 60-72	Rawe

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Tāngia he motuhanga o tō kōawa

Ngā kitenga: _____



Pepa Aroturuki Rua

Tātai rerenga wai

Ingoa wāhi : _____ Rōpū

Tūmahi 1

Tātaia te toharite o te hōhonu
Inea te hōhonu, kia 10 ngā wāhi
i te whitinga o te kōawa

1. _____ mita
2. _____ mita
3. _____ mita
4. _____ mita
5. _____ mita
6. _____ mita
7. _____ mita
8. _____ mita
9. _____ mita
10. _____ mita

Whakawehea te Tapeke ki te 10
Hōhonu toharite _____ mita

Tūmahi 2

Inea te whānui o te kōawa

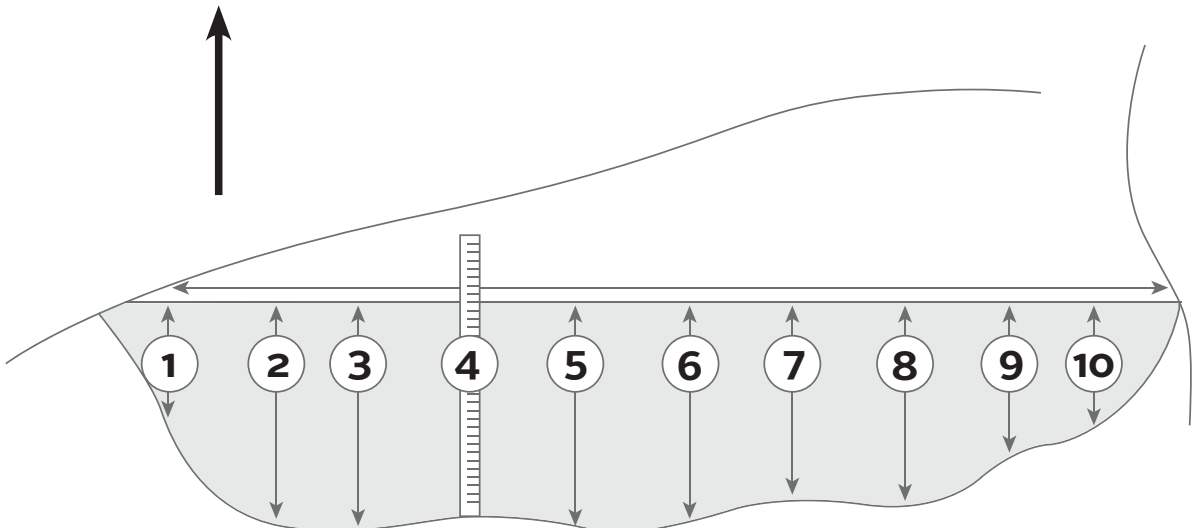
_____ mita

Tūmahi 3

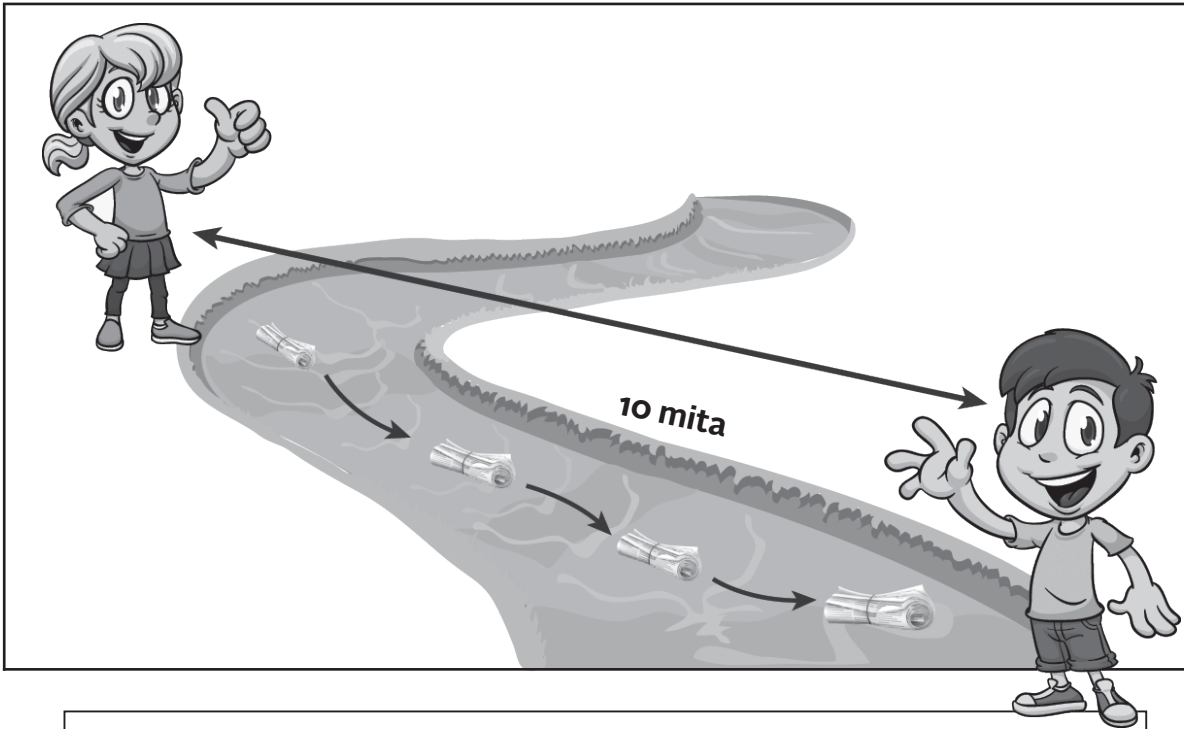
Tātaia te rohe o te motuhanga

Hōhonu toharite x whānui = rohe

_____ (m) x _____ (m) _____ = (m²)



Pepa Aroturuki Rua



Tūmahi 4

Me mahi tēnei kia 3 tāima ka tātai ai i te toharite

Tātaia te tere whaiahu o te rere

Inea te tāima e rere tētahi rākau, tētahi aha rānei i te 10 mita

Tāima i te 10m _____ hēkona

1. _____

Te tere whaiahu o te kahuwai = te tawhiti
e whakawehea ana ki te tāima toharite

2. _____

_____ (m) = _____ (m/secs)

3. _____

Toharite: _____

(tāima katoa e whakawehea ana ki
te nama o ngā whakamātau)

Tūmahi 5

Tātaia te rere o te wai o te kōawa – Hōhonu toharite x whānui = rohe

Tere whaiahu _____ (m/hēkona) x **rohe** _____ (m³) = **Rere** _____ (m³hēkona)

1000 rita i te 1 mita pūtoru. Kia huri te rere ki te rita/hēkona me whakarea ki te 1000.

_____ (m³/hēkona) x 1000 = rere


_____ (rita/hēkona)


Pepa Aroturuki Toru


Te tae, te pūrotu


Ingoa wāhi: _____ Rōpū

Te tae o te kōawa

 He aha te tae o te wai ina titiro ana koe ki te kōawa? _____

 He aha te tae o te wai ina kapu atu ki ō ringaringa? _____


 Āhea paru ai te āhua o te kōawa? _____

 Pēhea te hā o te wai? Arā, he māori, he ika, he reporepo, he hou? _____

Ngā āhua e rerekē ai te tae: Aronuku, para, matū otaota.

Ngā āhua e rerekē ai te hā: Te teitei o te rere, te nui o te pūkohu wai, he wāhi tuku para, ngā kau/hipi, kararehe mate.

Te Pūrotu

 He mahi mā tētahi tokorua te whakamātau pūrotu. Mā tētahi e kōhi he wai marino kia āta whakakāia katoatia te ngongo kia kaua e natunatu ai te waipara. Kia kaua e waiho he mirumiru i te ngongo.

Whaimuri nei, me puru te aukume me te kōpae pango ki roto ki te ngongo e tata ana ki te pito putanga o te ngongo. Tāpirihia tērā atu aukume ki waho o te ngongo e piri pai ai te kōpae pango. Purua te putanga o te ngongo ki te taupoki rapa.

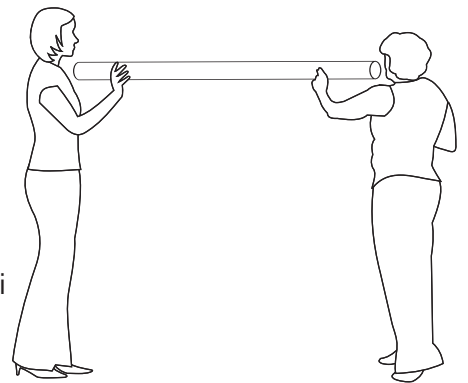
Haria te ngongo ki tētahi wāhi marumaru kia kore e pā mai ngā hihi o Tamanuiterā, ā, mā tētahi e pupuri ngā pito e rua. Me pupuri kia whakarara ki te whenua ka titiro ki rō ngongo mā te pito pūrotu. Me kume ngā aukume tae noa kia kore e kitea te kōpae pango. Mā tō hoamahi pea e āwhina ina neke atu i tō ringa te mahi kume. Tirohia te wāhi o te kōpae (mā te pānui i te mitarau kei waho o te ngongo).

Me mahi anō tēnei mahi kia 3 kia 4 tāima tae noa atu ka riro mai he pūrotu toharite.

Rawe: > 100mr, Āhua pai: 55 ki 100mr, Koretake:< 50mr

1. _____ 2. _____ 3. _____ Toharite: _____

(Toharite) pūrotu _____ (mitarau)



Pepa Aroturuki Whā

Pūkohu wai



Me kimi he kaka e tipu ana i te whaiawa, ā, he rongō rānei i te hāwaniwani kei ngā kōhatu?

Pururua o te tewe/kaka: _____ (mm)

Tae: _____ (kākāriki, parāone, pūrotu rānei)

Whakatau tata o te % o te uwhiuwhi

_____ % uwhiuwhi kaka

_____ % uwhiuwhi tewe

_____ % karekau he pūkohu wai e tipu ana

Me maha ngā ine pāmahana mā te whakamahi i te Ine-matatini i ngā wāhi rerekē o te kōawa (arā, wāhi marumarū, ki ngā hihi o Tamanuiterā, i te rere, i te wāhi āta rere, ki hea, ki hea)

Pāmahana °C: _____

Inea te kahakawe o tētahi tīpako wai mai i te au kaha mā te whakamahi Ine-matatini.

Kahakawe: _____

Whakamahia te Ine-matatini hei ine i tētahi tīpako o te au kaha o te kōawa hei tātai pH.

pH: _____

Pepa Aroturuki Rima

Ingoa wāhi : _____ Rōpū

Momo tuaiwi-kore	Te tokomaha o ia momo
Ngā piriwai	
Rangotoka kaitā	
Rangotoka paku	
Rangopūkore	
Rangopū	
Rangopāhi	
Rangodobson	
Ngā tātaka	
Kēkēwai (kikorangi) Kihitara (whero)	
Ngā kapowai	
Ngā Takarepo	
Ngā whētiko	
Mūhoe	
Ngā noke	
Ngā rango	

Kuputaka

aukaha	central current of stream, river
aukume	magnet
hā	smell
hāwaniwani	slimy
lne-matatini	Multimeter
kahakawe	conductivity
kaka	filament
kapowai	dragonfly
kēkēwai	blue damselfly
kihitarā	red damselfly
kōawa	stream
kōpae pango	black disc
matū otaota	tannin
mauti	pasture
mauwha	shrub
mawhiti	crustacean
mita pūtoru	cubic metre
mitarau (mr)	centimetre
motuhanga	cross section
mūhoe	waterboatmen
natunatu	stir up
nōhanga	habitat
noke	worm
otaota	vegetation
otinga	result, answer
paenga	margin

pihapiha	gills
piriwai	mayfly
puhihi	antennae
pūkohu wai	algae
pururua	thickness
rango	fly
rangopū	cased caddis
rangopūkore	uncased caddis
rangotoka	stonefly
tahataha	bank (of stream, river)
takarepo	amphipod
tapeke	total
tātai	calculate
tātaka	beetle
tere whaiahu	velocity
tewe	film (of algae)
tīpako	sample
toharite	average
torong	larvae
tūmahi	task, step
uwhiuwhi	cover
wekuweku	tuft
whaiawa	bed of stream, river
whakamātau	trial, test, experiment
whakawehea	divide
whētiko	mud snail