



WHANAKETANGA 1a

WHANAKETANGA 1e

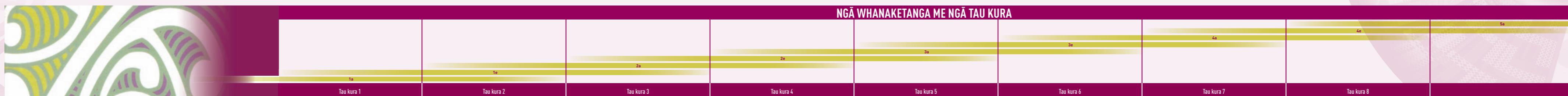
WHANAKETANGA 2a

<b>Te Tau</b> <small>(Te Mātauranga Tau me ngā Rautaki Tau)</small>	<ul style="list-style-type: none"> <li>ngā <b>rautaki tatau pānga-tahi</b> hei whakaoti paheko tau.</li> <li>ngā tauotī mai i te 0 ki te 20, arā, ko ngā tohutau, ngā kupu tau, me te rahi o ngā tau</li> <li>te <b>whakaahuahanga</b> me te raupapa o ngā tau</li> <li>ngā tau rearua ki te 10 me ngā haurua e whai pānga ana</li> <li>te mātauranga <b>uara tū</b> e hāngai ana, pēnei i ngā <b>tauhono takirua</b> o roto i te 5 me te 10, me ngā <b>wāwāhitanga uara tū</b>.</li> </ul>	<ul style="list-style-type: none"> <li>ngā <b>rautaki tatau māwhitiwhiti</b>, ngā <b>rautaki tatau ake</b>, me ngā <b>rautaki tohatoha ōrite</b> hei whakaoti paheko tau.</li> </ul>	<ul style="list-style-type: none"> <li>ngā tauotī mai i te 0 ki te 100 me te mātauranga <b>uara tū</b> e hāngai ana</li> <li>te tatau mawhiti-2, mawhiti-5, mawhiti-10, whakamua,</li> <li>ngā meka tāpiritanga ki te 10 me ngā tangohanga e whai pānga ana</li> <li>ngā tau rearua ki te 20 me ngā haurua e whai pānga ana</li> <li>te whakaatu <b>paheko tau</b> hei <b>whārite</b></li> <li>ngā kupu, ngā tohu, ngā <b>whakaahuahanga</b>, me te tikanga o ngā haurua me ngā hauwhā.</li> </ul>	<ul style="list-style-type: none"> <li>ngā tauotī mai i te 0 ki te 1 000, me te mātauranga <b>uara tū</b> e hāngai ana</li> <li>ngā hautau māmā</li> <li>ngā meka tāpiritanga ki te 20 me ngā tangohanga e whai pānga ana</li> <li>te raupapa hautau māmā mēnā he ōrite te <b>tauraro</b>.</li> </ul>	
<b>Te Tauira</b> <small>me te Pānga me te Pāunga</small>	<ul style="list-style-type: none"> <li>te hanga me te whakaraoa <b>tauira tāruarua</b>.</li> <li>te tautohu i te pūtake o te tauira e tāruaruatia ana.</li> </ul>	<ul style="list-style-type: none"> <li>te hanga me te whakaraoa <b>tauira raupapa āhuahanga</b>, <b>tauira raupapa tau</b> hoki</li> <li>te hanga me te whakaraoa tauira tāruarua, e rua ūna āhuatanga <b>taurangi</b></li> <li>te whiriwhiri <b>huāngā</b> o roto i tētahi tauira tāruarua māmā.</li> </ul>	<ul style="list-style-type: none"> <li>te tipu o te tauira raupapa me te <b>pūmautanga</b> o te tipu.</li> </ul>	<ul style="list-style-type: none"> <li>ngā tauira o roto i te <b>wāwāhitanga tāpiripiri</b> o tētahi tau</li> <li>te whakaatu <b>pānga māmā</b></li> <li>ngā tauira ka puta i te wāwāhi āhua</li> <li>te whakamahi rauemi kē hei hanga tauira tāruarua e rite ana ki ētahi atu.</li> </ul>	<ul style="list-style-type: none"> <li>ngā tauira o roto i ngā momo <b>whakaahuahanga</b> tau, pēnei i te <b>anga tekau</b>, te paparau, te <b>anga pirepire</b>, me te rārangī tau</li> <li>ngā momo whakaahuahanga pānga (pērā i te <b>hoahoahere</b> me te <b>tūtohi</b>)</li> <li>ngā <b>tauhono takirua</b> o roto i tētahi tau.</li> </ul>
<b>Te Ine me te Hangā</b> <small>Te Ine me te Hangā</small>	<ul style="list-style-type: none"> <li>te <b>whakatairite</b> me te whakaraupapa i te rahi o ngā <b>āhuatanga ine</b> o tētahi mea e rua</li> <li>te whakarōpū taonga i runga anō i ngā <b>āhuatanga hanga</b> o aua taonga.</li> </ul>	<ul style="list-style-type: none"> <li>ēnei āhuatanga e taea ana te ine: te roa, te taumaha, te wā, te paemahana, me te utu</li> <li>te reo māmā hei whakatairite i ngā āhuatanga ine o tētahi mea</li> <li>ēnei momo āhuatanga hanga māmā hei whakarōpū taonga: te rahi, te tae, te maha o ngā kokonga, ngā tāpā, me ngā mata.</li> </ul>	<ul style="list-style-type: none"> <li>te whakamahi <b>waeine aro kē</b> hei ine i tētahi mea</li> <li>te whakamahi <b>waeine aro whānui</b> māmā hei ine i tētahi mea</li> <li>ngā <b>āhuatanga hanga</b> o ngā <b>taparau</b> māmā me ngā <b>matarau</b> māmā.</li> </ul>	<ul style="list-style-type: none"> <li>ēnei āhuatanga e taea ana te ine – te hurihangā, te rōrahi/ kītanga, me te horahanga</li> <li>te pūmautanga o te waeine</li> <li>te <b>tāruarua</b> i te waeine hei ine i tētahi mea, kāore he āputa, kāore e <b>inaki</b> rānei</li> <li>te wāhi tīmata me te wāhi mutu o tētahi inenga</li> <li>ngā ingoa o ngā <b>āhua ahu-2</b> māmā me ngā <b>āhua ahu-3</b> māmā (pērā i te tapatoru, te tapawhā, te taimana, te porowhita, te tapawhā rite, te tapawhā hāngai, te pouaka, me te poi).</li> </ul>	<ul style="list-style-type: none"> <li>te hanga me te whakamahi taputapu ine, <b>waeine</b> hoki e whaitake ana</li> <li>te wāwāhi me te tāpiri inenga</li> <li>te whakaputa whakaaro mō te <b>whaitakenga</b> o tētahi inenga, i runga anō i ngā <b>whakataunga tata</b></li> <li>ngā <b>āhuatanga hanga</b> o ngā taparau whānui me ngā matarau whānui.</li> </ul>
<b>Te Wāhi, te Ahunga, me te Panoni</b>	<ul style="list-style-type: none"> <li>te whai me te hoatu tohutohu mō te <b>nuku</b></li> <li>te whakamārama i te wāhi noho o tētahi mea.</li> </ul>	<ul style="list-style-type: none"> <li>ngā kupu <b>ahunga</b> māmā, pēnei i ēnei: whakamua, whakamuri, mauī, matau, me ētahi noa atu</li> <li>ngā kupu whakaatu <b>taunga</b> māmā pēnei i ēnei: tata, tawhiti, taha, waenganui, mua, muri, me ētahi noa atu.</li> </ul>	<ul style="list-style-type: none"> <li>te whai me te hoatu tohutohu mō te hurihangā</li> <li>te tautohu i te whakaatanga, te hurihangā, me te nekenga, o tētahi āhua māmā.</li> </ul>	<ul style="list-style-type: none"> <li>te hurihangā whakatekaraka, te <b>hurihangā kōaro</b>, me ngā hurihangā hautanga māmā (<math>\frac{1}{4}, \frac{2}{4}, \frac{3}{4}, \frac{4}{4}, \frac{5}{4} \dots</math>)</li> <li>ngā āhuatanga ka noho <b>pūmau</b> i te <b>panoni</b> māmā.</li> </ul>	<ul style="list-style-type: none"> <li>te tautohu <b>ahunga</b> matua</li> <li>te whakaatu <b>taunga</b> māmā ki te <b>tukutuku</b></li> <li>te <b>whakaata</b>, te neke, me te huri i tētahi āhua māmā.</li> </ul>
<b>Te Tauanga</b>	<ul style="list-style-type: none"> <li>te whakarōpū raraunga māmā, e hāngai ana ki te ao o te tamaiti.</li> <li>ngā momo whakarōpūtanga e taea ana mō tētahi <b>huinga raraunga</b> māmā.</li> </ul>	<ul style="list-style-type: none"> <li>te hanga me te <b>whakamāori whakaari raraunga</b> māmā, pēnei i te kauwhata whakaahua.</li> </ul>	<ul style="list-style-type: none"> <li>te tatau <b>raraunga whakarōpū</b> hei whakaputa kōrero mō tētahi huinga raraunga</li> <li>te tikanga o te whakamahi whakaahua hei tohu raraunga.</li> </ul>	<ul style="list-style-type: none"> <li>te whakatakoto pātai māmā me te kohikohi <b>raraunga</b> e hāngai ana, hei whakaatu i ngā pātai</li> <li>te hanga me te <b>whakamāori whakaari raraunga</b> e hāngai ana ki ngā raraunga i kohia.</li> </ul>	<ul style="list-style-type: none"> <li>te whakaatu raraunga ki te <b>tūtohi tatau</b></li> <li>te whakaputa kōrero mō ngā āhuatanga matua o tētahi huinga raraunga.</li> </ul>
<b>Te Tūponotanga</b>		<ul style="list-style-type: none"> <li>te tūhura i tētahi <b>pūāhua tūponotanga</b> māmā</li> <li>te <b>matapae</b> me te <b>whakamātau</b> i ngā <b>putanga</b> o tētahi <b>pāpono tūponotanga</b>.</li> </ul>	<ul style="list-style-type: none"> <li>ngā putanga ka taea i tētahi pāpono tūponotanga.</li> </ul>	<ul style="list-style-type: none"> <li>te reo māmā hei whakaahua i te tūponotanga o tētahi <b>putanga</b>.</li> </ul>	<ul style="list-style-type: none"> <li>te ōrite, te rerekē, te <b>rangirua</b> rānei o ngā putanga o tētahi <b>pāpono</b>.</li> </ul>

He Kupu Taka

āhua ahu-2	2-dimensional shape	huāngā	element	paheko tau	number-operation	rangirua	uncertain	tauhono takirua	additive pairs	tukutuku	grid	whakaata	reflection
āhua ahu-3	3-dimensional shape	huinga raraunga	data set	pāngā māmā	simple relations	rārangi hāngai	perpendicular line	tauhono takirua	additive number pairs	tūtohi tatau	tally chart	whakamāori	interpretation
āhuatanga hanga	geometric properties	hoaho a pere	arrow diagram	panoni	transformation	rārangi pūtahi	intersecting line	tūtohi	table	ura tū	place value	whakamātau	trial
āhuatanga ine	measurement attributes	inaki	overlap	pāpono	event	rārangi whakarara	parallel line	taparau	polygon	waeine	unit of measurement	whakatairite	comparison
ahunga	direction	kōaro	anti-clockwise	pāpono tūponotanga	probability event	raraunga	data	tauira tāruarua	repetitive pattern	waeine aro kē	non-standard unit	whakataunga tata	estimation
anga pirepire	slavonic abacus	koeko	pyramid	poro	prism	raraunga whakarōpū	category data	taunga	position	waeine aro whānui	standard unit	whārite	equation
anga tekau	tens frame	koki hāngai	right angle	pūāhua tūponotanga	probability situation	rautaki tatau māwhitiwhiti	skip count strategy	taurangi	variable	wāwāhitanga uara tū	place value partitioning	whetoko	pace, stride
āputa	gap	matapae	predict	pūmau	invariant	rautaki tatau pāngā-tahi	one to one counting strategies	tāruarua	repeating	wāwāhitanga tāpiripiri	additive partitioning		
āwhiwihi	approximate	matarau	polyhedron	pūmautanga	invariance	rautaki tohatoha ōrite	equal sharing strategy	tauira raupapa āhuahanga	sequential geometric pattern	whakaari raraunga	data display		
hangarite	symmetry	nuku	movement	putanga	outcome	tatau ake	count on	tauira raupapa tau	sequential number pattern	whakaahuahanga	representation		

NGĀ WHANAKETANGA ME NGĀ TAU KURA



# WHANAKETANGA: PĀNGARAU (2e, 3a, 3e)



WHANAKETANGA 2e

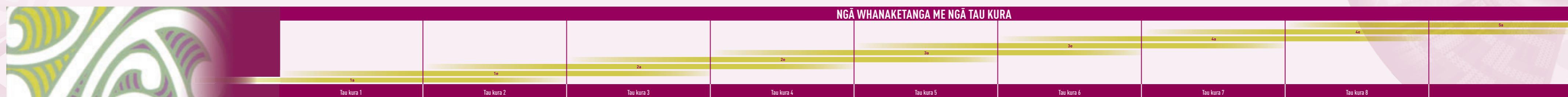
# WHANAKETANGA 3a

WHANAKETANGA 3e

WHANAKETANGA 2e		WHANAKETANGA 3a		WHANAKETANGA 3e	
Te Tino Wāhanga Pāngarau		Ngā Whāinga			
Ka whakaoti rapanga te ākonga, ka whakamārama otinga, e whai wāhi mai ana:	He tauira ēnei o ngā āhuatanga me mātua mōhio te ākonga e tutuki ai tana whakaoti rapanga:	Ka whakaoti rapanga te ākonga, ka whakamārama otinga, e whai wāhi mai ana:	He tauira ēnei o ngā āhuatanga me mātua mōhio te ākonga e tutuki ai tana whakaoti rapanga:	Ka whakaoti rapanga te ākonga, ka whakamārama otinga, e whai wāhi mai ana:	He tauira ēnei o ngā āhuatanga me mātua mōhio te ākonga e tutuki ai tana whakaoti rapanga:
<ul style="list-style-type: none"> <li>• ngā <b>rautaki wāwāhi tau</b> me te <b>rautaki paheko kōaro</b> mō te tāpiritanga me te tangohanga</li> <li>• ngā <b>rautaki tāpiri tāruarua</b> mō te whakareatanga me te whakawehenga māmā, hei whiriwhiri hoki i te hautanga māmā o tētahi tau.</li> </ul>	<ul style="list-style-type: none"> <li>• ngā tauoti mai i te 0 ki te 10 000, me te mātauranga <b>uara tū</b> e hāngai ana</li> <li>• ngā meka whakareatanga o te 2, te 5, me te 10, me ngā whakawehenga e whai pānga ana</li> <li>• ngā kupu, ngā tohu, ngā <b>whakaahuahanga</b>, me te tikanga o ngā haurua, ngā hauroru, ngā hauwhā, ngā haurima, ngā hauwaru, me ngā hautekau</li> <li>• te raupapa <b>hautau waetahi</b>.</li> </ul>	<ul style="list-style-type: none"> <li>• ngā tauoti mai i te 0 ki te 100 000 me te mātauranga <b>uara tū</b> e hāngai ana</li> <li>• ngā <b>rautaki whakarea</b> māmā mō te whakareatanga, te whakawehenga, me te whiriwhiri hautanga māmā o tētahi tauoti.</li> </ul>	<ul style="list-style-type: none"> <li>• ngā tauoti mai i te 0 ki te 100 000 me te mātauranga <b>uara tū</b> e hāngai ana</li> <li>• ngā <b>rautaki whakarea</b> māmā mō te whakareatanga, te whakawehenga, me te whiriwhiri hautanga māmā o tētahi tauoti.</li> <li>• ngā meka whakareatanga ki te 10 x 10 me ngā whakawehenga e whai pānga ana</li> <li>• te raupapa hautau māmā</li> <li>• ngā momo <b>whakaahuatanga</b> hautanga ā-ira, me te hononga ki ngā hautau noa.</li> </ul>	<ul style="list-style-type: none"> <li>• ngā <b>rautaki whakarea</b> mō te whakareatanga, te whakawehenga, me te whiriwhiri hautanga o tētahi tauoti.</li> </ul>	<ul style="list-style-type: none"> <li>• ngā tauoti mai i te 0 ki te 1 000 000 me tua atu, ngā hautau noa, ngā tau ā-ira [kia 3 ngā mati ā-ira], me te mātauranga <b>uara tū</b> e hāngai ana</li> <li>• ngā hononga whānui o ngā meka matua pērā i te 3 x 0.4 = 1.2</li> <li>• te <b>whakaawhihi</b> tauoti hei <b>whakatau tata</b> i te otinga o tētahi <b>paheko tau</b></li> <li>• te raupapa hautau.</li> </ul>
<ul style="list-style-type: none"> <li>• te whiriwhiri me te whakamahi i te ture o tētahi tauira māmā.</li> </ul>	<ul style="list-style-type: none"> <li>• te whakamahi tohu hei whakaatu i te ture o tētahi tauira.</li> </ul>	<ul style="list-style-type: none"> <li>• ngā <b>tauira tāpiripiri</b>, tauira whakarea māmā, me ngā <b>tauira āhuahanga</b>, pānga hoki</li> <li>• ngā tauira o roto i te <b>wāwāhitanga whakarea</b> o tētahi tau.</li> </ul>	<ul style="list-style-type: none"> <li>• te pūmautanga o tētahi ture hei whakaahua i tētahi tauira, tētahi pānga rānei.</li> </ul>	<ul style="list-style-type: none"> <li>• ngā <b>rautaki taurangi</b> māmā e hāngai ana ki tētahi tauira, ki tētahi pānga māmā rānei (pēnei i te pānga tāpiripiri me te pānga whakarea).</li> </ul>	<ul style="list-style-type: none"> <li>• te tikanga o te <b>taurangi</b> hei whakaatu i tētahi <b>rahinga</b> kāore e mōhiotia ana, me te whakamahinga o te pū [reta] hei tohu taurangi.</li> </ul>
<ul style="list-style-type: none"> <li>• te kōwhiri i ngā <b>waeine</b> e hāngai ana ki te horopaki me te tōtika anō o te inenga e whaitake ana</li> <li>• te tuhi hoahoa me te hanga tauira o ngā <b>āhua ahu-2</b> me ngā <b>āhua ahu-3</b>.</li> </ul>	<ul style="list-style-type: none"> <li>• te whakamahi i te rūri, te <b>tāporowhita</b>, me te <b>koki hāngai</b> hei ine, hei tuhi āhua.</li> </ul>	<ul style="list-style-type: none"> <li>• ngā momo <b>āwhata</b> maha me ngā hautanga ā-ira o tētahi <b>waeine</b></li> <li>• ngā <b>raumata</b> o ngā āhua ahu-3 māmā, pēnei i te mataono rite, te poro tapawhā hāngai, me te koeko tapawhā hāngai.</li> </ul>	<ul style="list-style-type: none"> <li>• te whakamahi i ngā momo taputapu ine whānui (pērā i te <b>ine-koki</b>).</li> </ul>	<ul style="list-style-type: none"> <li>• te whakatau tata me te whiriwhiri horahanga māmā, rōrahi māmā</li> <li>• te tuhi <b>raumata</b> o ngā <b>āhua ahu-3</b> whānui.</li> </ul>	<ul style="list-style-type: none"> <li>• ngā <b>waeine</b> e tika ana mō te horahanga me te rōrahi, pēnei i te cm<sup>2</sup>, te cm<sup>3</sup>, te m<sup>2</sup>, me te m<sup>3</sup></li> <li>• te whakamahi <b>tukutuku</b> hei whiriwhiri horahanga</li> <li>• te whakamahi <b>mataono rite</b> hei whiriwhiri rōrahi.</li> </ul>
<ul style="list-style-type: none"> <li>• te whakaatu ahunga, taunga hoki ki te mahere māmā, pērā i ngā mahere o ngā wāhi e mōhiotia ana</li> <li>• te whai me te hoatu tohutohu haere huarahi</li> <li>• te tautohu i ngā āhuatanga ka noho <b>pūmau</b>, me ngā āhuatanga ka rerekē i tētahi <b>panoni</b>.</li> </ul>	<ul style="list-style-type: none"> <li>• ngā taunga me ngā ahunga o ngā <b>āhuatanga kōhure</b> o tōna wāhi noho, pēnei i te maunga, te awa, te marae, te kura, me ētahi noa atu.</li> </ul>	<ul style="list-style-type: none"> <li>• te <b>tukutuku</b>, te <b>takirua raupapa</b>, ngā ahunga matua, me ngā mahere māmā hei whakaatu taunga, huarahi, <b>panoni</b> māmā hoki.</li> </ul>	<ul style="list-style-type: none"> <li>• ngā ahunga matua e whā o te <b>kāpehu</b> me ngā ahunga kei waenganui i ērā (pērā i te rawhiti-mā-tonga)</li> <li>• ngā tikanga o te whakaatu taunga ki tētahi pūnaha tukutuku.</li> </ul>	<ul style="list-style-type: none"> <li>• te hanga me te whakamārama tauira ka hua mai i te <b>panoni tāruarua</b></li> <li>• ngā <b>panoni</b> matua e hua mai ai te <b>mātātuhi</b> i tōna <b>mātāoroko</b>.</li> </ul>	<ul style="list-style-type: none"> <li>• ngā tikanga mō te whakamārama panoni (pērā i te pū me te koki o te hurihangā, te rārangī whakaata, te rāhi me te ahunga o te neke, me te <b>taurahi</b> o tētahi whakarahiinga māmā).</li> </ul>
<ul style="list-style-type: none"> <li>• te <b>raraunga whakarōpū</b> me te <b>raraunga motumotu</b></li> <li>• te whakaputa kōrero mō ngā whakakitenga o tētahi <b>tūhuratanga tauanga</b>.</li> </ul>	<ul style="list-style-type: none"> <li>• te whakaatu raraunga ki te <b>kauwhata pou</b> māmā, me te <b>kauwhata ira</b></li> <li>• ngā <b>tikanga matatika</b> e hāngai ana (pērā i ngā momo pātai e tika ana kia kore ai te kaiwhakatu e mamae, e whakaitia rānei).</li> </ul>	<ul style="list-style-type: none"> <li>• te whakatakoto pātai e hāngai ana me te kohikohi raraunga hei tūhura i te pātai</li> <li>• te <b>raraunga motukore</b> (pērā i te <b>raraunga houanga</b>)</li> <li>• te whakaputa kōrero mō ngā tauira, ngā ia, me ngā āhuatanga kōhure o tētahi huinga raraunga.</li> </ul>	<ul style="list-style-type: none"> <li>• te whakaatu raraunga ki te kauwhata rārangī</li> <li>• te āhua o te whakaaringa raraunga hei whakaatu i ngā ia, ngā tauira, me ngā <b>āhuatanga kōhure</b> o roto i ngā raraunga.</li> </ul>	<ul style="list-style-type: none"> <li>• te <b>raraunga whakarōpū matatini</b></li> <li>• te arotake i te whaihua o ngā momo <b>whakaari raraunga</b>.</li> </ul>	<ul style="list-style-type: none"> <li>• te whakaatu raraunga ki te <b>kauwhata rautō</b> me te <b>kauwhata porowhita</b></li> <li>• ngā <b>tikanga matatika</b> e hāngai ana (pērā i te tikanga kia noho <b>matatapu</b> ngā kaiwhakatu pātai o tētahi tūhuratanga tauanga).</li> </ul>
<ul style="list-style-type: none"> <li>• te whakaatu tūponotanga ki tētahi <b>āwhata</b></li> <li>• te <b>whakamāori</b> whakaari raraunga māmā hei matapae i te putanga o tētahi <b>pāpono tūponotanga</b>.</li> </ul>	<ul style="list-style-type: none"> <li>• te whakaatu <b>putanga</b> ki tētahi whakaari raraunga māmā (pērā i te kauwhata ira, te kauwhata whakaahua, me te kauwhata pou).</li> </ul>	<ul style="list-style-type: none"> <li>• te tūhura <b>pūāhua tūponotanga</b> māmā, pēnei i te piu i tētahi uka, me te pīrori i tētahi mataono tau</li> <li>• te whakaatu tūponotanga hei hautau māmā i waenganui i te kore me te kotahi.</li> </ul>	<ul style="list-style-type: none"> <li>• te whakatairite i ngā <b>putanga matapae</b> me ngā <b>putanga whakamātau</b> o tētahi pāpono tūponotanga</li> <li>• te <b>wehe kētanga</b>, te <b>whakawhirinaki</b>, te <b>aukati</b> rānei o tētahi pāpono e rua.</li> </ul>	<ul style="list-style-type: none"> <li>• te reo me ngā <b>whakaahuahanga</b> whānui hei whakaatu tūponotanga.</li> </ul>	<ul style="list-style-type: none"> <li>• te whakamahi <b>rārangī hautau</b> hei whakaatu tūponotanga</li> <li>• te <b>hoahoa rākau</b> hei whakaatu i ngā <b>putanga</b> o ētahi <b>pāpono raupapa</b>.</li> </ul>

He Kupu Taka

āhuatanga kōhere	distinctive features	kauwhata pou	bar graph	panoni tāruarua	repetitive transformation	raraunga motumotu	discrete data	tāporowhita	compass	whakatau tata	estimate
aukati	mutually exclusive	kauwhata rautō	stem-and-leaf graph	pāpono raupapa	combined event	raraunga whakarōpū matatini	multivariate category data	tauira āhuahanga	geometric pattern	whakawhirinaki	dependent
āwhata	scale	koki hāngai	right angle	pūmau	invariant	raumata	net	tauira tāpiripiri	additive pattern		
hautau waetahi	unit fraction	mataono rite	cube	putanga matapae	theoretical outcome	rautaki paheko kōaro	inverse operation strategy	taurahi	scale factor		
hohoa rākau	tree diagram	mātāoroko	object	putanga whakamātau	experimental outcome	rautaki taurangi	algebraic strategy	tikanga matatika	ethical conventions		
ia	trends	matatapu	anonymous	rahinga	quantity	rautaki wāwāhi tau	part-whole strategy	tūhuratanga tauanga	statistical investigation		
ine-koki	protractor	mātātuhi	image	rārangi hautau	fraction line	rautaki whakarea	multiplicative strategy	wāwāhitanga whakarea	multiplicative partitioning		
kauwhata ira	dot graph	mati ā-ira	decimal places	raraunga houanga	time-series data	takirua raupapa	ordered pair	wehe kētanga	independent		
kauwhata porowhita	pie graph	paheko tau	number operation	raraunga motukore	continuous data	tāpiri tāruarua	repeating addition	whakaawhiwhi	round		



# WHANAKETANGA: PĀNGARAU (4a, 4e, 5a)



	WHANAKETANGA 4a		WHANAKETANGA 4e		WHANAKETANGA 5a	
Te Tino Wāhanga Pāngarau	Ka whakaotī rapanga te ākonga, ka whakamārama otinga, e whai wāhi mai ana:	He tauira ēnei o ngā āhuatanga me mātua mōhio te ākonga e tutuki ai tana whakaotī rapanga:	Ka whakaotī rapanga te ākonga, ka whakamārama otinga, e whai wāhi mai ana:	He tauira ēnei o ngā āhuatanga me mātua mōhio te ākonga e tutuki ai tana whakaotī rapanga:	Ka whakaotī rapanga te ākonga, ka whakamārama otinga, e whai wāhi mai ana:	He tauira ēnei o ngā āhuatanga me mātua mōhio te ākonga e tutuki ai tana whakaotī rapanga:
Te Tau (Te Mātauranga Tau me ngā Rautaki Tau)	<ul style="list-style-type: none"> <li>ngā rautaki whakarea whānui mō te whiriwhiri ūrāu, ūwehenga māmā hoki hei whakaatu pāngā rahinga.</li> </ul>	<ul style="list-style-type: none"> <li>ngā tauotī me ngā tau hautanga, me te mātauranga uara tū e hāngai ana</li> <li>ngā tikanga me te whakamahinga o te tau tōraro</li> <li>te whakaawhihi tauotī, tau ā-ira hoki</li> <li>ngā hautau ūrite (hautau, hautanga ā-ira, ūrāu)</li> <li>ngā tauwehe me ngā taurea o tētahi tau</li> <li>ngā ūrāu nui ake i te 100%.</li> </ul>	<ul style="list-style-type: none"> <li>ngā tau tōpū me ngā tau hautanga (hautau noa, hautau ā-ira, ūrāu)</li> <li>ngā rautaki tāpiripiri, whakarea hoki e hāngai ana ki ngā horopaki pāngā riterite (pērā i te ūwehenga me te pāpātanga māmā).</li> </ul>	<ul style="list-style-type: none"> <li>te taupū māmā (pērā i te pūrū me te pūtakerua)</li> <li>te tōtika me te whaitakenga o ngā whakataunga tata me ngā tātaitanga</li> <li>ngā huarahi e tino whaihua ana hei whakaotī tātaitanga i ngā horopaki maha.</li> </ul>	<ul style="list-style-type: none"> <li>ngā tau tōpū me ngā tau hautanga</li> <li>te kōwhiri i te rautaki paheko tau e tino hāngai ana ki te horopaki.</li> </ul>	<ul style="list-style-type: none"> <li>ngā tikanga me te whakamahinga o tētāngā ngahuru hei tohu i ngā tau tino nui, tino iti hoki</li> <li>ngā momo hātepe whakaotī paheko hautau.</li> </ul>
Te Tauira me te Pāngā	<ul style="list-style-type: none"> <li>te whakaatu pāngā māmā hei whārite taurangi, hei kauwhata anō hoki.</li> </ul>	<ul style="list-style-type: none"> <li>te hua o te huri i tētahi taurangi me te pāngā ki taurangi kē.</li> </ul>	<ul style="list-style-type: none"> <li>te whakaatu pāngā hei kupu, hei tūtohi, hei kauwhata, hei whārite hoki</li> <li>te whakaotī whārite taurangi māmā, pērā i te <math>3t + 5 = 47</math>.</li> </ul>	<ul style="list-style-type: none"> <li>te whakamahinga o te āhuatanga kōaro, te āhuatanga herekore, me te āhuatanga tohatoha hei whakaotī whārite</li> <li>te tikanga o te tuaka pou, te tuaka pae, me te takirua raupapa hei whakaatu i te pāngā o tētahi taurangi e rua ki te kauwhata</li> <li>te tikanga o te rārangi o tētahi kauwhata hei whakaatu i te pāngā o tētahi taurangi e rua.</li> </ul>	<ul style="list-style-type: none"> <li>te whārite me te kauwhata rārangi hei whakaatu pāngā.</li> </ul>	<ul style="list-style-type: none"> <li>te tikanga o ngā haukotinga tuaka me te rōnaki o tētahi kauwhata rārangi, me te puta o ēnei i rō whārite.</li> </ul>
Te Ine me te Hangā	<ul style="list-style-type: none"> <li>te whakawhitihitī waeine</li> <li>ngā inenga tapa me ngā ture hei tātai paenga, horahanga, rōrahi hoki o ngā āhua māmā</li> <li>te pāpātanga hei ine i tētahi mea [pēnei i te km/h hei ine i te tere]</li> <li>te whakaatu āhua ahu-3 hei hoaoho ahu-2 (pērā i te tuhinga hoaoho inerite)</li> <li>te tuhi hoaoho āwhata.</li> </ul>	<ul style="list-style-type: none"> <li>ngā momo tirohanga ki tētahi mea, pērā i te tirohanga ā-manu, te tirohanga mua, me te tirohanga mauī</li> <li>te whakamahinga o te ūwehenga me te taurahi hei tuhi hoaoho āwhata.</li> </ul>	<ul style="list-style-type: none"> <li>ngā momo wātaka whānui</li> <li>te whiriwhiri i te rahi o tētahi koki.</li> </ul>	<ul style="list-style-type: none"> <li>te tātai i te takanga o te wā</li> <li>te whakaatu wā-24</li> <li>te tikanga o te koki whakahāngai, te koki whakarārangai, te koki whakaturipū, te koki tāhapa, me te koki hāpūpū.</li> </ul>	<ul style="list-style-type: none"> <li>ngā ture hei tātai tapa, paenga, horahanga, koki, horahanga mata, rōrahi hoki o ngā āhua whānui</li> <li>ngā tikanga koki o te rārangi pūtahi, te rārangi whakarara, me ngā taparau.</li> </ul>	<ul style="list-style-type: none"> <li>te whakamahi i te ture a Pythagoras</li> <li>te tikanga o te koki tauroto, te koki tauaro, te koki taurite, me te koki tauwhiti.</li> </ul>
Te Wahi, te Ahunga, me te Panoni	<ul style="list-style-type: none"> <li>ngā koki o te kāpehu hei whakaatu ahunga</li> <li>te hangarite panoni o tētahi āhua.</li> </ul>	<ul style="list-style-type: none"> <li>te hononga o ngā koki ki ngā ahunga matua o te kāpehu</li> <li>ngā tikanga o te hangarite rārangi me te hangarite hurihangā o tētahi āhua.</li> </ul>	<ul style="list-style-type: none"> <li>te ūwehenga hei tātai taurahi, hei tātai hoki i te rahi o tētahi mātātūhi whakarahi</li> <li>tētahi raupapatanga panoni.</li> </ul>	<ul style="list-style-type: none"> <li>te hua o te whakarahi āhua (pērā i te pāngā ki te roa o ngā tapa, te horahanga me te rōrahi).</li> </ul>	<ul style="list-style-type: none"> <li>te hangarite o ngā koki o ngā rārangi pūtahi, ngā rārangi whakarara, ngā taparau, me ngā mataraū</li> <li>te whakaatu me te whakamārama panoni ki te papa kauwhata.</li> </ul>	<ul style="list-style-type: none"> <li>te whakamahi pere hei whakaatu nekehanga</li> <li>te whakamahi mahere me ōna āhuatanga katoa (pērā i te tutukutuku me te āwhata) hei whakaahua huarahi.</li> </ul>
Te Tauira	<ul style="list-style-type: none"> <li>te whakatakoto pātai, tāpātanga kōero rānei hei tūpāpā mō tētahi tūhuratanga tauanga</li> <li>te whakatairite i te tuari o tētahi huinga raraunga</li> <li>te whakamahi wēanga.</li> </ul>	<ul style="list-style-type: none"> <li>te tātai toharite, tau waenga, inenga whānui, tau tānui o tētahi huina raraunga, me te whakaotī ki te whakaari raraunga</li> <li>te whakaatu raraunga ki te kauwhata pouhere</li> <li>te arohaehae i te tōtika o te tukanga kohikohi raraunga, me te whakaari i ngā raraunga o tētahi tipako, hei whakaatu i te āhua o tētahi taupori.</li> </ul>	<ul style="list-style-type: none"> <li>te tātari i ngā whakakitenga o tētahi tūhuratanga tauanga</li> <li>te whakaatu raraunga ki te kauwhata pouhere</li> <li>ngā tikanga matatika e hāngai ana (pērā i te whakamōhio atu ki te kaiwhakautu pātai i te whakamahinga o ngā raraunga ka puta i te tūhuratanga tauanga).</li> </ul>	<ul style="list-style-type: none"> <li>te whakatakoto pātai, tāpātanga kōero rānei, te whakahaere tūhuratanga tauanga, me te whakaputu pūrongo</li> <li>te arotake i ngā kōero ka puta i tētahi tūhuratanga tauanga</li> <li>te whakaputu kōero mō te pāngā o tētahi taurangi ki tētahi.</li> </ul>	<ul style="list-style-type: none"> <li>te whakaatu raraunga ki te kauwhata kauamo me te kauwhata marara</li> <li>te whaitake me te whaihua o ngā momo whakaari raraunga</li> <li>ngā tikanga matatika e hāngai ana (pērā i te tikanga kia kaua e haukumea te āhua o ngā pātai).</li> </ul>	
Te Tūponotanga	<ul style="list-style-type: none"> <li>te tōkeke, te haukume rānei o tētahi pāpono tūponotanga.</li> </ul>	<ul style="list-style-type: none"> <li>te whakaatu tūponotanga hei ūrāu.</li> </ul>	<ul style="list-style-type: none"> <li>te whakairite i te tuari o ngā putanga matapae me ngā putanga whakamātau.</li> </ul>	<ul style="list-style-type: none"> <li>ngā take e taurangi ai ngā putanga o tētahi whakamātau tūponotanga.</li> </ul>	<ul style="list-style-type: none"> <li>tētahi pūāhua tūponotanga papa-maha.</li> </ul>	<ul style="list-style-type: none"> <li>te tātai tūponotanga o tētahi pāpono raupapa.</li> </ul>

## He Kupu Taka

āhuatanga herekore	associative property	hohoa āwhata	scale diagram	koki tāhapa	acute angle	ōwehenga	ratio	rārangi pūtahi	intersecting lines	tau waenga	median	tōkeke	fair
āhuatanga kōaro	commutative property	hohoa inerite	isometric diagram	koki tauaro	opposite angle	paenga	perimeter	raupapatanga panoni	combined transformation	taupori	population	tūari	distribution
āhuatanga tohatoha	distributive property	horopaki pāngā riterite	proportional context	koki taurite	corresponding angles	pāngā rahinga	quantitative relationship	rōnaki	slope	taupū	exponent	tukanga kohikohi raraunga	data collection process
arohaehae	critique	inenga whānui	range	koki tauroto	interior angles	papa-maha	multi-level	tāngā ngahuru	standard form	taurahi	scale factor	ture	formulae
hangarite panoni	transformation symmetry	tauwhata kauamo	box-and-whisker graph	koki tauwhiti	alternate angles	pāpātanga	rate	tāpātanga kōero	assertion	taurea	multiple	whārite taurangi	algebraic equation
hāte	algorithm	kauwhata marara	scatter plot	koki whakahāngai	complimentary angle	pāpono raupapa	combined event	tauri	analyse	tauehe	factor	wēanga	measure of central tendency
haukotinga tuaka	axis intercept	kauwhata pou whakaapaapa	stacked bar graph	koki whakaturipū	conjugate angle	pere	vector	tau tānui	mode	tikanga matatika	ethical conventions	tohārite	mean
haukume	bias	kauwhata pouhere	histogram	koki whakarārangai	supplementary angle	pūrūa	square	tau tōpū	integer	tauārora	sample	tau kura	mean
haukumea	be biased	koki hāpūpū	obtuse angle	mātātūhi	image	pūtakerua	Square root	tau tōraro	negative number				

## NGĀ WHANAKETANGA ME NGĀ TAU KURA

