WHANAKETANGA 1a: PĀNGARAU

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:*	
Te Tau (Te Mātauranga Tau me ngā Rautaki Tau)	• ngā rautaki tatau pānga-tahi[1] hei whakaoti paheko tau.	• ngā tauoti mai i te 0 ki te 20, arā, ko ngā tohutau, ngā kupu tau, me te rahi o ngā tau • te whakaahuahanga[2] me te raupapa o ngā tau • ngā tau rearua ki te 10 me ngā haurua e whai pānga ana • te mātauranga uara tū[3] e hāngai ana, pēnei i ngā tauhono takirua[4] o roto i te 5 me te 10, me ngā wāwāhitanga uara tū[5].	*[1]one to one counting strategies* *[2]representation* *[3]place value* *[4]additive number pairs* *[5]place value partitioning*
Te Tauira me te Pānga	• te hanga me te whakaroa tauira tāruarua[6].	• te tautohu i te pūtake o te tauira e tāruaruatia ana.	*[6]repetitive pattern*
Te Ine me te Hanga	• te whakatairite[7] me te whakaraupapa i te rahi o ngā āhuatanga ine[8] o ētahi mea e rua • te whakarōpū taonga i runga anō i ngā āhuatanga hanga[9] o aua taonga.	• ēnei āhuatanga e taea ana te ine: te roa, te taumaha, te wā, te paemahana, me te utu • te reo māmā hei whakatairite i ngā āhuatanga ine o ētahi mea • ēnei momo āhuatanga hanga māmā hei whakarōpū taonga: te rahi, te tae, te maha o ngā kokonga, ngā tapa, me ngā mata.	*[7]compare* *[8]measurement attributes* *[9]geometric properties*
Te Wāhi, te Ahunga, me te Panoni	• te whai me te hoatu tohutohu mō te nuku[10] • te whakamārama i te wāhi noho o tētahi mea.	• ngā kupu ahunga[11] māmā, pēnei i ēnei: whakamua, whakamuri, mauī, matau, me ētahi noa atu • ngā kupu whakaatu taunga[12] māmā pēnei i ēnei: tata, tawhiti, taha, waenganui, mua, muri, me ētahi noa atu.	*[10]movement* *[11]direction* *[12]position*
Te Tauanga	• te whakarōpū raraunga māmā, e hāngai ana ki te ao o te tamaiti.	• ngā momo whakarōpūtanga e taea ana mō tētahi huinga raraunga[13] māmā.	*[13]data set*

WHANAKETANGA 1e: PĀNGARAU

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:*	
Te Tau (Te Mātauranga Tau me ngā Rautaki Tau)	• ngā rautaki tatau māwhitiwhiti[1], ngā rautaki tatau ake[2], me ngā rautaki tohatoha ōrite[4] hei whakaoti paheko tau.	• ngā tauoti mai i te 0 ki te 100 me te mātauranga uara tū[3] e hāngai ana • te tatau mawhiti-2, mawhiti-5, mawhiti-10, whakamua, whakamuri hoki • ngā meka tāpiritanga ki te 10 me ngā tangohanga e whai pānga ana • ngā tau rearua ki te 20 me ngā haurua e whai pānga ana • te whakaatu paheko tau[5] hei whārite[6] • ngā kupu, ngā tohu, ngā whakaahuahanga[7], me te tikanga o ngā haurua me ngā hauwhā.	*[1]skip count strategy* *[2]count on [3]place value* *[4]equal sharing strategy* *[5]number-operation* *[6]equation* *[7]representation*
Te Tauira me te Pānga	• te hanga me te whakaroa tauira raupapa āhuahanga[8], tauira raupapa tau[9] hoki • te hanga me te whakaroa tauira tāruarua, e rua ōna āhuatanga taurangi[11] • te whiriwhiri huānga[12] o roto i tētahi tauira tāruarua māmā.	• te tipu o te tauira raupapa me te pūmautanga[10] o te tipu.	*[8]sequential geometric pattern* *[9]sequential number pattern* *[10]invariance [11]variable* *[12]element*
Te Ine me te Hanga	• te whakamahi waeine aro kē[13] hei ine i tētahi mea • te whakamahi waeine aro whānui[14] māmā hei ine i tētahi mea • ngā āhuatanga hanga[15] o ngā taparau[16] māmā me ngā matarau[17] māmā.	• ēnei āhuatanga e taea ana te ine – te hurihanga, te rōrahi/kītanga, me te horahanga • te pūmautanga o te waeine • te tāruarua[18] i te waeine hei ine i tētahi mea, kāore he āputa[19], kāore e inaki[20] rānei • te wāhi tīmata me te wāhi mutu o tētahi inenga • ngā ingoa o ngā āhua ahu-2[21] māmā me ngā āhua ahu-3[22] māmā (pērā i te tapatoru, te tapawhā, te taimana, te porowhita, te tapawhā rite, te tapawhā hāngai, te pouaka, me te poi).	*[13]non-standard unit* *[14]standard unit* *[15]geometric properties* *[16]polygon [17]polyhedron* *[18]repeating [19]gap [20]overlap* *[21]2-dimensional shape* *[22]3-dimensional shape*
Te Wāhi, te Ahunga, me te Panoni	• te whai me te hoatu tohutohu mō te hurihanga • te tautohu i te whakaatanga, te hurihanga, me te nekenga, o tētahi āhua māmā.	• te hurihanga whakatekaraka, te hurihanga kōaro[23], me ngā hurihanga hautanga māmā ($\frac{1}{4}, \frac{2}{4}, \frac{3}{4}, \frac{4}{4}, \frac{5}{4}$ ...) • ngā āhuatanga ka noho pūmau[24] i te panoni[25] māmā.	*[23]anti-clockwise* *[24]invariant* *[25]transformation*
Te Tauanga	• te hanga me te whakamāori[26] whakaari raraunga[27] māmā, pēnei i te kauwhata whakaahua.	• te tatau raraunga whakarōpū[28] hei whakaputa kōrero mō tētahi huinga raraunga • te tikanga o te whakamahi whakaahua hei tohu raraunga.	*[26]interpret* *[27]data display* *[28]category data*
Te Tūponotanga	• te tūhura i ētahi pūāhua tūponotanga[29] māmā • te matapae[30] me te whakamātau[31] i ngā putanga[32] o tētahi pāpono tūponotanga [33].	• ngā putanga ka taea i tētahi pāpono tūponotanga.	*[29]probability situation* *[30]predict* *[31]trial* *[32]outcome* *[33]probability event*

WHANAKETANGA 2a: PĀNGARAU

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:*	
Te Tau (Te Mātauranga Tau me ngā Rautaki Tau)	• ngā rautaki wāwāhi tau[1] hei whakaoti paheko tau.	• ngā tauoti mai i te 0 ki te 1 000, me te mātauranga uara tū[2] e hāngai ana • ngā hautau māmā • ngā meka tāpiritanga ki te 20 me ngā tangohanga e whai pānga ana • te raupapa hautau māmā mēnā he ōrite te tauraro[3].	*[1]part–whole strategies* *[2]place value* *[3]denominator*
Te Tauira me te Pānga	• ngā tauira o roto i te wāwāhitanga tāpiripiri[4] o tētahi tau • te whakaatu pānga māmā[7] • ngā tauira ka puta i te wāwāhi āhua • te whakamahi rauemi kē hei hanga tauira tāruarua e rite ana ki ētahi atu.	• ngā tauira o roto i ngā momo whakaahuahanga[5] tau, pēnei i te anga tekau[6], te paparau, te anga pirepire[8], me te rārangi tau • ngā momo whakaahuahanga pānga (pērā i te hoahoa pere[9] me te tūtohi[10]) • ngā tauhono takirua[11] o roto i tētahi tau.	*[4]additive partitioning* *[5]representation [6]tens frame* *[7]simple relations [8]Slavonic abacus* *[9]arrow diagram [10]table* *[11]additive pairs*
Te Ine me te Hanga	• te hanga me te whakamahi taputapu ine, waeine[12] hoki e whaitake ana • te wāwāhi me te tāpiri inenga • te whakaputa whakaaro mō te whaitakenga[15] o tētahi inenga, i runga anō i ngā whakataunga tata[16] • ngā āhuatanga hanga[17] o ngā taparau whānui me ngā matarau whānui.	• te rahinga āwhiwhi[13] o ngā waeine aro whānui māmā me te hononga ki te rahi o tētahi mea e tino mōhiotia ana (pērā i te roa o te whetoko[14] me te rōrahi o tētahi ipu miraka) • ngā hautanga māmā o tētahi waeine • ngā momo tapatoru • ngā kupu āhuahanga e hāngai ana (pērā i te akitu, te mata, me te tapa) • ngā momo matarau[18] (pērā i ngā poro[19] me ngā koeko[20]) • te rārangi hāngai[21], te rārangi whakarara[22] me te rārangi pūtahi[23] • te koki hāngai[24].	*[12]unit of measurement* *[13]approximate [14]pace, stride* *[15]reasonableness* *[16]estimation* *[17]geometric properties* *[18]polyhedron [19]prism [20]pyramid* *[21]perpendicular line* *[22]parallel line [23]intersecting line* *[24]right angle*
Te Wāhi, te Ahunga, me te Panoni	• te tautohu ahunga[25] matua • te whakaatu taunga[26] māmā ki te tukutuku[27] • te whakaata[28], te neke, me te huri i tētahi āhua māmā.	• ngā kupu whānui mō te ahunga me te taunga, pēnei i ēnei: uta, tai, rahaki, tua, me ētahi noa atu • ngā ahunga matua o te kāpehu • te hangarite[29] o tētahi āhua māmā.	*[25]direction* *[26]position* *[27]grid* *[28]reflection* *[29]symmetry*
Te Tauanga	• te whakatakoto pātai māmā me te kohikohi raraunga[30] e hāngai ana, hei whakautu i ngā pātai • te hanga me te whakamāori[32] whakaari raraunga[33] e hāngai ana ki ngā raraunga i kohia.	• te whakaatu raraunga ki te tūtohi tatau[31] • te whakaputa kōrero mō ngā āhuatanga matua o tētahi huinga raraunga.	*[30]data* *[31]tally chart* *[32]interpret* *[33]data display*
Te Tūponotanga	• te reo māmā hei whakaahua i te tūponotanga o tētahi putanga[34]. .	• te ōrite, te rerekē, te rangirua[35] rānei o ngā putanga o tētahi pāpono[36].	*[34]outcome* *[35]uncertainty* *[36]event*

WHANAKETANGA 2e: PĀNGARAU

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:*	
Te Tau (Te Mātauranga Tau me ngā Rautaki Tau)	• ngā rautaki wāwāhi tau[1] me te rautaki paheko kōaro[2] mō te tāpiritanga me te tangohanga • ngā rautaki tāpiri tāruarua[4] mō te whakareatanga me te whakawehenga māmā, hei whiriwhiri hoki i te hautanga māmā o tētahi tau.	• ngā tauoti mai i te 0 ki te 10 000, me te mātauranga uara tū[3] e hāngai ana • ngā meka whakareatanga o te 2, te 5, me te 10, me ngā whakawehenga e whai pānga ana • ngā kupu, ngā tohu, ngā whakaahuahanga[5], me te tikanga o ngā haurua, ngā hautoru, ngā hauwhā, ngā haurima, ngā hauwaru, me ngā hautekau • te raupapa hautau waetahi[6].	*[1]part–whole strategy* *[2]inverse operation strategy* *[3]place value* *[4]repeating addition* *[5]representation* *[6]unit fraction*
Te Tauira me te Pānga	• te whiriwhiri me te whakamahi i te ture o tētahi tauira māmā.	• te whakamahi tohu hei whakaatu i te ture o tētahi tauira.	
Te Ine me te Hanga	• te kōwhiri i ngā waeine[7] e hāngai ana ki te horopaki me te tōtika anō o te inenga e whaitake ana • te tuhi hoahoa me te hanga tauira o ngā āhua ahu-2[10] me ngā āhua ahu-3.	• te whakamahi i te rūri, te tāporowhita[8], me te koki hāngai[9] hei ine, hei tuhi āhua.	*[7]unit of measurement* *[8]compass* *[9]right angle* *[10]2-dimensional shape*
Te Wāhi, te Ahunga, me te Panoni	• te whakaatu ahunga, taunga hoki ki te mahere māmā, pērā i ngā mahere o ngā wāhi e mōhiotia ana • te whai me te hoatu tohutohu haere huarahi • te tautohu i ngā āhuatanga ka noho pūmau[12], me ngā āhuatanga ka rerekē i tētahi panoni[13].	• ngā taunga me ngā ahunga o ngā āhuatanga kōhure[11] o tōna wāhi noho, pēnei i te maunga, te awa, te marae, te kura, me ētahi noa atu.	*[11]distinctive features* *[12]invariant* *[13]transformation*
Te Tauanga	• te raraunga whakarōpū[14] me te raraunga motumotu[15] • te whakaputa kōrero mō ngā whakakitenga o tētahi tūhuratanga tauanga[18].	• te whakaatu raraunga ki te kauwhata pou[16] māmā, me te kauwhata ira[17] • ngā tikanga matatika[19] e hāngai ana (pērā i ngā momo pātai e tika ana kia kore ai te kaiwhakautu e mamae, e whakaitia rānei).	*[14]category data* *[15]discrete data* *[16]bar graph* *[17]dot graph* *[18]statistical investigation* *[19]ethical conventions*
Te Tūponotanga	• te whakaatu tūponotanga ki tētahi āwhata[20] • te whakamāori[22] whakaari raraunga māmā hei matapae i te putanga o tētahi pāpono tūponotanga[23].	• te whakaatu putanga[21] ki tētahi whakaari raraunga māmā (pērā i te kauwhata ira, te kauwhata whakaahua, me te kauwhata pou).	*[20]scale* *[21]outcome* *[22]interpret* *[23]probability event*

WHANAKETANGA 3a: PĀNGARAU

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:*	
Te Tau (Te Mātauranga Tau me ngā Rautaki Tau)	• ngā rautaki wāwāhi tau whānui mō te tāpiritanga me te tangohanga • ngā rautaki whakarea[2] māmā mō te whakareatanga, te whakawehenga, me te whiriwhiri hautanga māmā o tētahi tauoti.	• ngā tauoti mai i te 0 ki te 100 000 me te mātauranga uara tū[1] e hāngai ana • ngā hautau noa me ngā hautanga ā-ira (kia kotahi te mati ā-ira[3]) • ngā meka whakareatanga ki te 10 x 10 me ngā whakawehenga e whai pānga ana • te raupapa hautau māmā • ngā momo whakaahuahanga[4] hautanga ā-ira, me te hononga ki ngā hautau noa.	[1]*place value* [2]*multiplicative strategy* [3]*decimal places* [4]*representations*
Te Tauira me te Pānga	• ngā tauira tāpiripiri[5], tauira whakarea māmā, me ngā tauira āhuahanga[6], pānga hoki • ngā tauira o roto i te wāwāhitanga whakarea[7] o tētahi tau.	• te pūmautanga o tētahi ture hei whakaahua i tētahi tauira, tētahi pānga rānei.	[5]*additive pattern* [6]*geometric pattern* [7]*multiplicative partitioning*
Te Ine me te Hanga	• ngā momo āwhata[8] maha me ngā hautanga ā-ira o tētahi waeine[9] • ngā raumata[11] o ngā āhua ahu-3 māmā, pēnei i te mataono rite, te poro tapawhā hāngai, me te koeko tapawhā hāngai.	• te whakamahi i ngā momo taputapu ine whānui (pērā i te ine-koki[10]).	[8]*scale* [9]*unit of measurement* [10]*protractor* [11]*net*
Te Wāhi, te Ahunga, me te Panoni	• te tukutuku[12], te takirua raupapa[13], ngā ahunga matua, me ngā mahere māmā hei whakaatu taunga, huarahi, panoni māmā hoki.	• ngā ahunga matua e whā o te kāpehu[14] me ngā ahunga kei waenganui i ērā (pērā i te rāwhiti-mā-tonga) • ngā tikanga o te whakaatu taunga ki tētahi pūnaha tukutuku.	[12]*grid* [13]*ordered pair* [14]*compass*
Te Tauanga	• te whakatakoto pātai e hāngai ana me te kohikohi raraunga hei tūhura i te pātai • te raraunga motukore[15] (pērā i te raraunga houanga[16]) • te whakaputa kōrero mō ngā tauira, ngā ia, me ngā āhuatanga kōhure o tētahi huinga raraunga.	• te whakaatu raraunga ki te kauwhata rārangi • te āhua o te whakaaringa raraunga hei whakaatu i ngā ia[17], ngā tauira, me ngā āhuatanga kōhure[18] o roto i ngā raraunga.	[15]*continuous data* [16]*time-series data* [17]*trends* [18]*distinctive features*
Te Tūponotanga	• te tūhura pūāhua tūponotanga[19] māmā, pēnei i te piu i tētahi uka, me te pīrori i tētahi mataono tau • te whakaatu tūponotanga hei hautau māmā i waenganui i te kore me te kotahi.	• te whakatairite i ngā putanga matapae[20] me ngā putanga whakamātau[21] o tētahi pāpono tūponotanga • te wehe kētanga[22], te whakawhirinaki[23], te aukati[24] rānei o ētahi pāpono e rua.	[19]*probability situation* [20]*theoretical outcome* [21]*experimental outcome* [22]*independent* [23]*dependent* [24]*mutually exclusive*

WHANAKETANGA 3e: PĀNGARAU

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:*	
Te Tau (Te Mātauranga Tau me ngā Rautaki Tau)	• ngā rautaki whakarea[1] mō te whakareatanga, te whakawehenga, me te whiriwhiri hautanga o tētahi tauoti.	• 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 uara tū[2] e hāngai ana • ngā hononga whānui o ngā meka matua pērā i te 3 x 0.4 = 1.2 • te whakaawhiwhi[3] tauoti hei whakatau tata[4] i te otinga o tētahi paheko tau[5] • te raupapa hautau.	*[1]multiplicative strategy* *[2]place value* *[3]round* *[4]estimate* *[5]number operation*
Te Tauira me te Pānga	• ngā rautaki taurangi[6] māmā e hāngai ana ki tētahi tauira, ki tētahi pānga māmā rānei (pēnei i te pānga tāpiripiri me te pānga whakarea).	• te tikanga o te taurangi[7] hei whakaatu i tētahi rahinga[8] kāore e mōhiotia ana, me te whakamahinga o te pū (reta) hei tohu taurangi.	*[6]algebraic strategy* *[7]variable* *[8]quantity*
Te Ine me te Hanga	• te whakatau tata me te whiriwhiri horahanga māmā, rōrahi māmā • te tuhi raumata[10] o ngā āhua ahu-3[11] whānui.	• ngā waeine[9] e tika ana mō te horahanga me te rōrahi, pēnei i te cm^2, te cm^3, te m^2, me te m^3 • te whakamahi tukutuku[12] hei whiriwhiri horahanga • te whakamahi mataono rite[13] hei whiriwhiri rōrahi.	*[9]unit of measurement* *[10]net* *[11]3-dimensional shape* *[12]grid* *[13]cube*
Te Wāhi, te Ahunga, me te Panoni	• te hanga me te whakamārama tauira ka hua mai i te panoni tāruarua[14] • ngā panoni matua e hua mai ai te mātātuhi[15] i tōna mātāoroko[16].	• ngā tikanga mō te whakamārama panoni (pērā i te pū me te koki o te hurihanga, te rārangi whakaata, te rahi me te ahunga o te neke, me te taurahi[17] o tētahi whakarahinga māmā).	*[14]repetitive transformation* *[15]image* *[16]object* *[17]scale factor*
Te Tauanga	• te raraunga whakarōpū matatini[18] • te arotake i te whaihua o ngā momo whakaari raraunga[21].	• te whakaatu raraunga ki te kauwhata rautō[19] me te kauwhata porowhita[20] • ngā tikanga matatika[22] e hāngai ana (pērā i te tikanga kia noho matatapu[23] ngā kaiwhakautu pātai o tētahi tūhuratanga tauanga).	*[18]multivariate category data* *[19]stem-and-leaf graph* *[20]pie graph* *[21]data display* *[22]ethical conventions* *[23]anonymous*
Te Tūponotanga	• te reo me ngā whakaahuahanga[24] whānui hei whakaatu tūponotanga.	• te whakamahi rārangi hautau[25] hei whakaatu tūponotanga • te hoahoa rākau[26] hei whakaatu i ngā putanga[27] o ētahi pāpono raupapa[28].	*[24]representation* *[25]fraction line* *[26]tree diagram* *[27]outcome* *[28]combined event*

WHANAKETANGA 4a: PĀNGARAU

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:*	
Te Tau (Te Mātauranga Tau me ngā Rautaki Tau)	• ngā rautaki whakarea[1] whānui mō te whiriwhiri ōrau, ōwehenga[2] māmā hoki hei whakaatu pānga rahinga[4]. .	• ngā tauoti me ngā tau hautanga, me te mātauranga uara tū[3] e hāngai ana • ngā tikanga me te whakamahinga o te tau tōraro[5] • te whakaawhiwhi[6] tauoti, tau ā-ira hoki • ngā hautau ōrite (hautau, hautanga ā-ira, ōrau) • ngā tauwehe[7] me ngā taurea[8] o tētahi tau • ngā ōrau nui ake i te 100%.	*[1]multiplicative strategy* *[2]ratio* *[3]place value* *[4]quantitative relationship* *[5]negative number* *[6]round* *[7]factor [8]multiple*
Te Tauira me te Pānga	• te whakaatu pānga māmā hei whārite taurangi[9], hei kauwhata anō hoki.	• te hua o te huri i tētahi taurangi me te pānga ki taurangi kē.	*[9]algebraic equation*
Te Ine me te Hanga	• te whakawhitiwhiti waeine • ngā inenga tapa me ngā ture hei tātai paenga[10], horahanga, rōrahi hoki o ngā āhua māmā • te pāpātanga[14] hei ine i tētahi mea (pēnei i te km/h hei ine i te tere) • te whakaatu āhua ahu-3[15] hei hoahoa ahu-2 (pērā i te tuhinga hoahoa inerite[16]) • te tuhi hoahoa āwhata.	• ngā momo tirohanga ki tētahi mea, pērā i te tirohanga ā-manu, te tirohanga mua, me te tirohanga mauī • te whakamahinga o te ōwehenga[11] me te taurahi[12] hei tuhi hoahoa āwhata[13].	*[10]perimeter* *[11]ratio [12]scale factor* *[13]scale diagram* *[14]rate* *[15]3-dimensional shape* *[16]isometric diagram*
Te Wāhi, te Ahunga, me te Panoni	• ngā koki o te kāpehu[17] hei whakaatu ahunga • te hangarite panoni[18] o tētahi āhua.	• te hononga o ngā koki ki ngā ahunga matua o te kāpehu • ngā tikanga o te hangarite rārangi[19] me te hangarite hurihanga[20] o tētahi āhua.	*[17]compass* *[18]transformation symmetry* *[19]line symmetry* *[20]rotational symmetry*
Te Tauanga	• te whakatakoto pātai, tāpaetanga kōrero[21] rānei hei tūāpapa mō tētahi tūhuratanga tauanga • te whakatairite i te tuari[26] o ētahi huinga raraunga • te whakamahi wēanga[28].	• te tātai toharite[22], tau waenga[23], inenga whānui[24], tau tānui[25] o tētahi huinga raraunga, me te whakaatu ki te whakaari raraunga • te whakaatu raraunga ki te kauwhata pou whakaapaapa[27] • te tautohu i ngā taurangi[29] o tētahi tūhuratanga tauanga, te kohikohi me te whakaari raraunga mō aua taurangi.	*[21]assertion [22]mean* *[23]median [24]range* *[25]mode [26]distribution* *[27]stacked bar graph* *[28]measure of central tendency* *[29]variable*
Te Tūponotanga	• te tōkeke[30], te haukume[31] rānei o tētahi pāpono tūponotanga[32].	• te whakaatu tūponotanga hei ōrau.	*[30]fairness* *[31]bias* *[32]probability event*

WHANAKETANGA 4e: PĀNGARAU

Te Tino Wāhanga Pāngarau	Ngā Whāinga *Ka whakaotí 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:*	
Te Tau (Te Mātauranga Tau me ngā Rautaki Tau)	• ngā tau tōpū[1] me ngā tau hautanga (hautau noa, hautau ā-ira, ōrau) • ngā rautaki tāpiripiri, whakarea hoki e hāngai ana ki ngā horopaki pānga riterite[5] (pērā i te ōwehenga[7] me te pāpātanga[8] māmā).	• te taupū[2] māmā (pērā i te pūrua[3] me te pūtakerua[4]) • te tōtika me te whaitakenga[6] o ngā whakataunga tata me ngā tātaitanga • ngā huarahi e tino whaihua ana hei whakaoti tātaitanga i ngā horopaki maha.	*[1]integer [2]exponent* *[3]square (power of two)* *[4]square root* *[5]proportional context* *[6]reasonableness* *[7]ratio [8]rate*
Te Tauira me te Pānga	• te whakaatu pānga hei kupu, hei tūtohi, hei kauwhata, hei whārite hoki • te whakaoti whārite taurangi[11] māmā, pērā i te $3t + 5 = 47$.	• te whakamahinga o te āhuatanga kōaro[9], te āhuatanga herekore[10], me te āhuatanga tohatoha[12] hei whakaoti whārite • te tikanga o te tuaka pou, te tuaka pae, me te takirua raupapa hei whakaatu i te pānga o ētahi taurangi[13] e rua ki te kauwhata • te tikanga o te rārangi o tētahi kauwhata hei whakaatu i te pānga o ētahi taurangi e rua.	*[9]commutative property* *[10]associative property* *[11]algebraic equation* *[12]distributive property* *[13]variable*
Te Ine me te Hanga	• ngā momo wātaka whānui • te whiriwhiri i te rahi o tētahi koki.	• te tātai i te takanga o te wā • te whakaatu wā-24 • te tikanga o te koki whakahāngai[14], te koki whakarārangi[15], te koki whakahuripū[16], te koki tāhapa[17], me te koki hāpūpū[18].	*[14]complimentary angle* *[15]supplementary angle* *[16]conjugate angle* *[17]acute angle* *[18]obtuse angle*
Te Wāhi, te Ahunga, me te Panoni	• te ōwehenga hei tātai taurahi[19], hei tātai hoki i te rahi o tētahi mātātuhi[20] whakarahi • tētahi raupapatanga panoni[21].	• te hua o te whakarahi āhua (pērā i te pānga ki te roa o ngā tapa, te horahanga me te rōrahi).	*[19]scale factor* *[20]image* *[21]combined transformation*
Te Tauanga	• te tātari[22] i ngā whakakitenga o tētahi tūhuratanga tauanga • te arohaehae[24] i te tōtika o te tukanga kohikohi raraunga[25], me te whakaari i ngā raraunga o tētahi tīpako[27], hei whakaatu i te āhua o tētahi taupori[28].	• te whakaatu raraunga ki te kauwhata pouhere[23] • ngā tikanga matatika[26] e hāngai ana (pērā i te whakamōhio atu ki te kaiwhakautu pātai i te whakamahinga o ngā raraunga ka puta i te tūhuratanga tauanga).	*[22]analyse* *[23]histogram* *[24]critique* *[25]data collection process* *[26]ethical conventions* *[27]sample* *[28]population*
Te Tūponotanga	• te whakatairite i te tuari[29] o ngā putanga matapae[30] me ngā putanga whakamātau[31].	• ngā take e taurangi[32] ai ngā putanga o tētahi whakamātau tūponotanga.	*[29]distribution* *[30]theoretical outcome* *[31]experimental outcome* *[32]variable*

WHANAKETANGA 5a: PĀNGARAU

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:*	
Te Tau (Te Mātauranga Tau me ngā Rautaki Tau)	• ngā tau tōpū[1] me ngā tau hautanga • te kōwhiri i te rautaki paheko tau[3] e tino hāngai ana ki te horopaki.	• ngā tikanga me te whakamahinga o te tānga ngahuru[2] hei tohu i ngā tau tino nui, tino iti hoki • ngā momo hātepe[4] whakaoti paheko hautau.	[1]*integer* [2]*standard form* [3]*number operation* [4]*algorithm*
Te Tauira me te Pānga	• te whārite me te kauwhata rārangi hei whakaatu pānga.	• te tikanga o ngā haukotinga tuaka[5] me te rōnaki[6] o tētahi kauwhata rārangi, me te puta o ēnei i rō whārite.	[5]*axis intercept* [6]*slope*
Te Ine me te Hanga	• ngā ture[7] hei tātai tapa, paenga, horahanga, koki, horahanga mata, rōrahi hoki o ngā āhua whānui • ngā tikanga koki o te rārangi pūtahi[12], te rārangi whakarara, me ngā taparau.	• te whakamahi i te ture a Pythagoras • te tikanga o te koki tauroto[8], te koki tauaro[9], te koki taurite[10], me te koki tauwhiti[11].	[7]*formulae* [8]*interior angles* [9]*opposite angle* [10]*corresponding angles* [11]*alternate angles* [12]*intersecting lines*
Te Wāhi, te Ahunga, me te Panoni	• te hangarite[13] o ngā koki o ngā rārangi pūtahi[14], ngā rārangi whakarara[15], ngā taparau, me ngā matarau • te whakaatu me te whakamārama panoni ki te papa kauwhata.	• te whakamahi pere[16] hei whakaatu nekehanga • te whakamahi mahere me ōna āhuatanga katoa (pērā i te tukutuku[17] me te āwhata[18]) hei whakaahua huarahi.	[13]*symmetry* [14]*intersecting lines* [15]*parallel lines* [16]*vector* [17]*grid* [18]*scale*
Te Tauanga	• te whakatakoto pātai, tāpaetanga kōrero[19] rānei, te whakahaere tūhuratanga tauanga, me te whakaputa pūrongo • te arotake[23] i ngā kōrero ka puta i tētahi tūhuratanga tauanga • te whakaputa kōrero mō te pānga o tētahi taurangi[26] ki tētahi.	• te whakaatu raraunga ki te kauwhata kauamo[20] me te kauwhata marara[21] • te whaitake me te whaihua o ngā momo whakaari raraunga[22] • ngā tikanga matatika[24] e hāngai ana (pērā i te tikanga kia kaua e haukumea[25] te āhua o ngā pātai).	[19]*assertion* [20]*box-and-whisker graph* [21]*scatter plot* [22]*data display* [23]*evaluate* [24]*ethical conventions* [25]*be biased* [26]*variable*
Te Tūponotanga	• tētahi pūāhua tūponotanga papa-maha[27].	• te tātai tūponotanga o tētahi pāpono raupapa[28].	[27]*multi-level* [28]*combined event*