

Must knows

This is a “co-requisite” to NCEA, available to ākonga from Year 9 onward.

Ākonga must achieve the Standard to be awarded NCEA.

Credits from this co-requisite do not count toward the 60 credit requirement for NCEA Level 1, 2, or 3.

Ākonga achieve pāngarau credits only once; there are no further numeracy requirements for NCEA at any level.

Assessment format

Externally assessed.

Two options:

1. Kete Manarua - portfolio managed by the kaiako and ākonga; must be submitted to NZQA by set dates.
2. Tūmahi Aromatawai Pātahi (TAPā/CAA) - a timebound digital or paper-based assessment developed by NZQA; offered twice a year;

Te whakamahi pāngarau hei whakaoti rapanga o te ao o te ākonga

US 32412 | 10 credits

Outcome

Use mathematics to solve problems related to the student’s world.

Performance criteria 1.1

Contextualise situations that involve mathematical procedures.

Range

Select an appropriate operation, representation, variable, and/or method to solve problems.

Performance criteria 1.2

Use mathematical procedures appropriate to the situation.

Range

Use mathematical procedures appropriate to the big ideas and situations, to solve problems.

Performance criteria 1.3

Interpret the reasonableness of the mathematical responses to the situations.

Range

Interpret the solutions, outcomes, and approaches to a situation.

The 7 content ideas

1

Fluently and flexibly solve problems that require operations on numbers, understanding the relative size of those numbers, and making sense of the answer in context. (Te Whakaaro Tāpiri; Whāinga 10, Whakaaro Whakarea Whāinga 9 & 10)

This means that learners can:

- choose an appropriate approach to calculation (written, mental or digital)
- work with whole numbers to billions, fractions, decimals to 3 places, percentages and integers
- solve problems include commonly encountered rates, ratios and powers
- work with simple interest
- calculate averages (including the mean, mode and median).

2

Recognise and work with mathematical relationships. (Te Taura me te panga Whāinga 6 & 7)

This means that learners can:

- work with linear relationships that are represented as graphs or word rules
- recognise unknown values for a given relationship.

3

Understand and use the spatial properties and representations of objects. (Te Āhuahanga; Whāinga 8 & 9)

This means that learners can:

- recognise symmetry and transformation
- transform objects to design for purpose (e.g., enlarge, reflect, rotate, and translate)
- make connections between the representation of objects in simple 2D and 3D.

4

Understand and use systems to locate and navigate. (Te Āhuahanga; Whāinga 8 & 9)

This means that learners can:

- navigate between points
- describe position and orientation in situations that are flexible in the system being used
- use 8-point compass directions.

5

Use numbers and units to measure and express attributes of objects and events as quantities, to a degree of precision appropriate to the context. (Te Ine; Whāinga 6 & 7)

This means that learners can:

- use and interpret results of the measurement (including timetables and time charts)
- select appropriate units and convert between metric measures for the same attribute
- solve measurement problems in practical contexts
 - perimeter
 - volume (cuboids only)
 - area (rectangles, parallelograms, triangles)
 - mass
 - temperature.

6

Understand and reason with statistics and data. (Te Tauanga; Whāinga 8)

This means that learners can:

- recognise, and use appropriate data displays to investigate questions or claims for summary, comparison, and simple time-series situations
- interpret data displays using features such as spread, clustering or frequency, centrality, and unusual pieces of data
- evaluate statements and representations based on data that is provided to them.

7

Use probability to interpret situations that involve elements of chance. (Te Tūponotanga; Whāinga 5)

This means that learners can:

- recognise and interpret everyday probabilities such as chance, simple risk and odds
- use the language of probability to describe outcomes.

Portfolio

Collect “naturally occurring” evidence from everyday student activities, ensuring it:

- covers a range of relevant situations.
- meets the criteria for all three outcomes.
- is in Māori and includes at least TWO forms: written, oral, or visual.

Collecting evidence

Activities for evidence collection must ensure ākonga:

- Complete tasks independently.
- Develop and apply their own pāngarau problem-solving methods using provided information.
- Independently recognise relevant socio-cultural practices in the situation.
- Supply evidence covering all seven content ideas in the Pāngarau Learning Matrix, with a single activity potentially addressing multiple content ideas.

Presenting evidence

Evidence can be presented as:

- a digital, audio, or video file, or
- as a PDF, or
- as a combination of both.

The Portfolio of Evidence Cover Sheet must be completed by the kaiako.

Me mātua mōhio

He tautokorua tēnei mō te tohu NCEA e wātea ana ki ngā ākonga mai i te Tau 9, ā haere ake.

Me puta te ihu o te ākonga i te paerewa e whakawhiwhia ai ki te tohu NCEA.

Kāore ēnei whiwhinga e whai wāhi ki ngā whiwhinga e 60 e tutuki ai te Kaupae 1, 2, 3 rānei o NCEA.

Ka kotahi anake te whakatutukitanga a te ākonga i ngā paerewa pāngarau; kāore he paerua pāngarau kē atu i ngā kaupae o NCEA.

He aromatawai ā-waho

He aromatawai ā-waho.

E rua ngā kōwhiringa:

1. He Kete Manarua – he kōpaki ka tiakina e te kaiako me te ākonga; me mātua tuku ki a NZQA i mua i ngā rangi tuku.
2. Te Tūmahi Aromatawai Pātahi (TAPā) – he aromatawai wā-here ā-matihiko, ā-pepa rānei ka whakaritea e NZQA; ka rua ngā whakahaerenga i te tau.

Te whakamahi pāngarau hei whakaoti rapanga o te ao o te ākonga

US 32412 | 10 ngā whiwhinga

Putanga ako

Te whakamahi pāngarau hei whakaoti rapanga o te ao o te ākonga.

Paerua mahi 1.1

Te whakakaupapa i ngā pūāhua ki ngā tikanga pāngarau.

Whānuitanga

Ko te whiriwhiri i te paheko, i te whakaaturanga, i te taurangi, i te tikanga rānei hei whakaoti rapanga.

Paerua mahi 1.2

Te whakamahi i ngā tikanga pāngarau e tika ana ki ngā pūāhua.

Whānuitanga

Ko te whakamahi i ngā tikanga pāngarau e hāngai pū ana ki ngā whakaaro whānui, ki ngā pūāhua hei whakaoti rapanga.

Paerua mahi 1.3

Te whakamāori i te whaitake o ngā urupare pāngarau ki ngā pūāhua.

Whānuitanga

Ko te whakamāori i ngā whakaotinga, i ngā putanga, i ngā aronga ki te pūāhua.

Ngā ariā matua e whitu

Ko te tere me te tāwariwari ki te whakaotioti rapanga e kawea ai he paheko tau, te mārāma ki te rahi tauriterite o aua tau, me te whakamārāma i te otinga i runga anō i te horopaki.

I tōna tikanga, ka mōhio te ākonga ki te:

- whiriwhiri i te aronga tātaitai tika (ahakoa ā-tuhi mai, ā-hinengaro mai, ā-matihiko mai rānei)
- whakamahi i ngā tau oti tae noa ki ngā piriona, i ngā hautau, i ngā tau ā-ira tae noa ki ngā mati e toru, i ngā ōrau me ngā tau tōpū
- whakaoti i ngā rapanga e mau nei ngā pāpātanga, ngā ōwehenga me ngā pū
- whakamahi i te huamoni tūpā
- tātai i ngā toharite (tae noa ki te tau tānui, ki te tau waenga anō hoki).

Ko te mōhio ki ngā rau pānga o te pāngarau, me te whakamahi i aua pānga.

I tōna tikanga, ka mōhio te ākonga ki te:

- whakamahi i ngā pānga rārangi e whakaahuahia ana hei kauwhata, hei ture ā-kupu rānei
- tātai i ngā uara kāore e mōhiohia ana mō tētahi pānga.

Ko te mārāma ki ngā āhuatanga o te mokowā me te whakaahuahanga o ngā taonga, me te whakamahi i aua āhuatanga.

I tōna tikanga, ka mōhio te ākonga ki te:

- hangarite me te panoni
- panoni i ngā taonga hei hanga mō tētahi kaupapa (hei tauira, te whakarahi, te whakaata, te huri, te neke rānei)
- tūhonohono i ngā whakaahuahanga taonga ngāwari, ahu-2 nei, ahu-3 nei hoki.

Ko te mārāma ki ngā pūnaha hei whakarite i ngā tūwāhi me te tātai ara haere. Ko te whakamahi hoki i aua pūnaha.

I tōna tikanga, ka mōhio te ākonga ki te:

- tātai i te ara haere i waenga i ngā tūwāhi
- whakaahua i te taunga me te aronga i ngā pūāhua e tāwariwari ana i roto i te pūnaha e whakamahia ana
- whakamahi i ngā ahunga o tētahi kāpehu ahu-8.

1

Ko te whakamahi i ngā tau me ngā waeine hei ine, hei whakaahua i ngā taonga me ngā pāpono hei rahinga, me te whakaawhiwhitanga tika mō te horopaki.

I tōna tikanga, ka mōhio te ākonga ki te:

- whakamahi me te whakamāori i ngā putanga o te ine (tae atu ki ngā wātaka me ngā kauwhata wā)
- whiriwhiri i ngā waeine tika me te whakawhiwhiti i waenga i ngā waeine ngahuru mō te āhuatanga kotahi
- whakaoti i ngā rapanga ine i ngā horopaki whaitake
 - te paenga
 - te rōrahi (ngā poro-tapawhā hāngai anake)
 - te horahanga (ngā tapawhā hāngai, ngā tapawhā whakarara, ngā tapatoru)
 - te papatipu
 - te paemahana.

5

Ko te mārāma ki ngā tikanga tauanga, raraunga.

I tōna tikanga, ka mōhio te ākonga ki te:

- whakamahi i ngā whakaari raraunga hei tūhura i ngā pātai, i ngā tāpaetanga hoki mō ngā pūāhua whakarāpopoto, ngā pūāhua whakariterite me ngā pūāhua houanga
- whakamāori i ngā whakaari raraunga mā te whakamahi i te hora, i te rāpoipo, i te auautanga, i te wēanga me ngā mōwaho
- arotake i ngā tāpaetanga kōrero me ngā whakaahuahanga a tangata kē i runga i te āhua o ngā raraunga i kitea.

6

Ko te whakamahi i te tūponotanga hei whakamāori i ngā pūāhua e mau mai ana he āhuatanga tūpono.

I tōna tikanga, ka mōhio te ākonga ki te:

- mōhio ki ngā āhuatanga tūpono o ia rā, pēnei i ngā tūraru me ngā tūwehe
- whakamahi i te reo o te tūponotanga hei whakaahua i ngā putanga.

7

Te kete manarua

Me kohikohi ngā taunaki ka “puta māori mai” i ngā mahi tauira o ia rā, me te whai kia:

- kitea te whānuitanga o ngā pūāhua e hāngai ana.
- tutuki ngā paerua o ngā putanga e toru.
- reo Māori tonu, kia kitea hoki ngā āhua e RUA, neke atu rānei: ā-tuhi, ā-waha, ā-ataata.

Te kōhi taunakitanga

Me mātua tuku ngā mahi kohikohi taunaki i ngā ākonga kia:

- Tautauāmoa te whakaoti i ngā ngohe.
- Whakawhanake, kia whakamahi hoki i āna ake tikanga whakaoti rapanga pāngarau mā te whakamahi i ngā kōrero i tukua.
- Tautauāmoa te mōhio ki ngā tikanga ahurea pāpori e hāngai ana i te pūāhua.
- Tuku i ngā taunakitanga e pā ana ki ngā whakaaro matua e whitu kei te Tukutuku Ako – Pāngarau mā tētahi ngohe kotahi e taunaki ana pea i ētahi whakaaro matua.

Te tuku taunakitanga

Ka taea te tuku ngā taunakitanga hei:

- kōnae matihiko, oro, ataata rānei
- PDF
- whiriwhiringa o ngā mea e rua.

Me mātua whakaoti te kaiako i te Pepa Uhi o te Kōpaki Taunaki.