



Pattern & relationships



Uea's got the beat

This assessment example illustrates one way that **Kōwhiri Whakapae** can be used to inform your assessment documentation. You will see connections to Kōwhiri Whakapae, and *Te Whāriki* highlighted in the annotations.

Introduction

This sequence of three assessments follows four year-old Uea who attends a Pacific education and care centre and enjoys music, movement, and drumming with a pātē.

Uea's father is Nuiean and his mother is European/Pakeha. He is the third of four children and particularly enjoys music and movement, and drumming on a pātē.

Kaiako have been exploring the Maths area of Kōwhiri Whakapae: Pattern and relationships. They have already implemented several 'Lay The Groundwork' practices (step 1) and intentionally use maths language such as "fast, slow, loud" to describe drum patterns that accompany dancing. Kaiako have discussed the Kōwhiri Whakapae website with Uea's parents. Over the three assessments, kaiako use steps 2 and 3 of Kōwhiri Whakapae: Pattern and relationships to help them notice, recognise and respond to Uea's progress.

As you read the assessments, annotations will provide more information about the connections kaiako have made to *Te Whāriki* and how they have used information from Kōwhiri Whakapae: Pattern and relationships.



Uea's drum beats make a pattern

February 2025

NOTICE

Feb 10.

Uea joined the takalo today. He stamped his feet and shifted his body in time with the pate beat on the CD player. He had a big grin! - Michelle

18 Feb.

Uea helped to pass the galue around all the children today. Thanks for your help Uea! - Michelle

18 Feb.

Uea banging the table with his friend Jona - two beats / pause / two beats... then fast. They also experimented with fast ...then stop over and over.

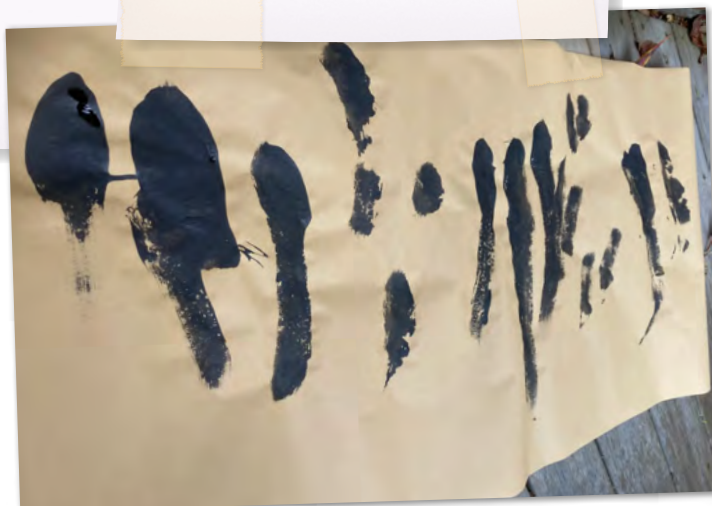
Captured on video (share with whānau). Later they used the big pate together and swapped around sticks. Uea chose the shorter ones - Asalei

Feb 14.

Children were doing the takalo challenge again today. Uea watched, then lifted a pate from the shelf and started drumming. He focussed on the beat of the pate on the CD and sped up, paused & used double beats in pretty good time with it! - Tui

20 Feb. I suggested Uea and Jono try banging on the outside table with the short paintbrushes - so we can see their beat. Uea became engrossed and we ended up getting out the very long paper on the deck. He crouched on the step and worked his way along. (See photo of picture)

- Asalei



Te Whāriki & Kōwhiri Whakapae links

Notice

In this series of assessments, kaiako and whānau use sticky notes to write anecdotes. When a 'thread' or interest emerges, kaiako add red dots to the relevant notes to inform planning and help them to recognise progress.

Feb 10, 14, 24, 26 illustrate the way these visible notes help kaiako and whānau to share information and respond to children's learning in a timely way.

Feb 18, 25, 26 - these notes also describe other significant interests & events.

Feb 20 image - kaiako have photographed Uea's painting and stuck a small image of it alongside the sticky notes.

Note that: Takalo is a Niuean war dance. Galue is Niuean for kai.

24 Feb. Fakaalofa atu :)
Last night Uea showed his little sister how to do fast and slow beats by banging on the coffee table. They had such fun. When dad got home Uea pleaded for him to use the pate, and then joined in. He loves the big pate.
- Coral

25 Feb. Uea spent a long time looking at a picture book about airplanes. He made swooping movements with his hands as he looked at pictures
- completely engrossed :)
- Michelle

26 Feb. All morning in the sandpit with Jona. They dug very deep holes and used buckets from the water tank tap to fill them to the top. They worked together for over an hour. Great persistence filling the holes! - Tui

26 Feb. We took the long painting home - Uea showed dad and explained the slow bits with the gaps, and very fast bits. We're so proud of Uea :). - Coral

(Just seen the note about the holes too - at the beach last weekend Uea spent ages digging holes with his brother. So exciting when the tide filled them!!

RECOGNISE

Uea seems very interested in exploring drum patterns. He listens carefully and imitates the pattern of the pate beat as well as creating his own. Lately he has even begun representing these patterns by making marks on paper. Amazing work Uea.

Pattern is an important concept in maths / mefematika and is based on recognising "what's the same?" and "what's different?" When a pattern is recognised, children can predict the next object and a pattern can be continued or changed. We can support children to think mathematically about patterns by helping them notice, extend, or change patterns, and to create their own patterns.

Information from Kōwhiri Whakapae suggests that Uea's current capabilities are within Te Pō phase of Pattern and Relationships (children explore and create maths representations, e.g. by making simple patterns, marks or symbols).

Recognise

Using the Maths area of Kōwhiri Whakapae: Pattern and Relationships, Kaiako recognise that Uea is demonstrating some Te Pō capabilities - 'explore and create new maths representations, e.g. making simple patterns; explore things in their world using marks, symbols'.

Kaiako use information from the Kōwhiri Whakapae: maths, section (What is pattern and relationships?) to help them describe the mathematical learning.

They also make links to learning outcomes from *Te Whāriki*: Mana reo | Communication strand and to key principles.

Te Whāriki: Uea is increasingly recognising [and creating] mathematical symbols and concepts and using them with enjoyment and purpose (Learning Outcome from Te Whāriki strand: Mana reo | Communication). Uea's learning, and kaiako teaching practices, also reflect Te Whāriki principles:

- *Holistic development | Kotahitanga, by embedding maths learning in real contexts, and*
- *Family and Community | Whānau tangata - connecting with whānau.*

RESPOND

To support Uea's learning we will:

- *Offer a variety of materials each day for Uea and his friends to explore, and stay nearby to engage with them, especially during the morning.*
- *Provide extra resources such as books or videos in the early afternoon to enrich/build on learning while younger children rest.*
- *Invite Uea's dad to visit and share his pate skills with the children.*
- *Comment on Uea's actions as he creates beat patterns and represents them using paint. Ask Uea open questions about the repeating elements and use the language of comparison, e.g. faster, slower, louder, softer...*
- *Continue to provide paint and long paper outside (deck or fence).*
- *Document Uea's pattern making (drumming & painting) and his use of maths language (verbal).*

Respond

Kaiako use Kōwhiri Whakapae (Maths: Pattern and relationships) to identify Te Pō practices such as supporting children "... to copy simple repeated patterns that they enjoy... predict the next piece of a pattern... use language of comparison ... [and access] resources to ... represent maths thinking." These practices inform their response. Kaiako also ensure that their interactive role is foregrounded.

Uea paints patterns

March 2025

NOTICE

March 4. Sunny day today :) We put long paper along the fence again. Uea 'drummed' his way along the fence with the paint brushes (1 red, 1 black). Jono joined him and they ended up painting each other before getting under the sprinkler. What a day!
- Asalei



Te Whāriki & Kōwhiri
Whakapae links

Notice

March 4. Together, this note and image provide evidence of Uea's interest, capability and friendship.

Mar 7. We put 4 pate in a square and invited children to help tell the story of taku turtle (who sneaks past a fisherman & gets chased). Uea, Emani, Grace, and Salilo did a great job of drumming with slower beats (sneaking) or faster (chased). We talked about the different pace of the different beats also practiced louder (scary) and softer (tired but safe) beats. Captured on video for children to watch later. -Tui

12 March

Uea asked for the book on planes at mat-time. He knew a lot of terms such as 'flaps', 'nose', wings. He said he hasn't been on a plane. I wonder if someone in the family has?

March 7. Illustrates an intentional teaching practice based on the planned response from the previous assessment.

14 March. Uea's been interested in planes for a while. His big brother Emani is making one out of wood and Uea's been allowed to help a little (holding bits while Emani glues). Emani has a diagram book. :)
- Coral

18 March. Jono drummed the pate while Uea painted on the fence keeping beat. They went fast, stop, faster, stop, slow - repeat. Then Uea said "you drum," and he pointed to parts of the painting (pattern) to 'conduct' Jono. What clever boys - Asalei

March 18. This note captures an important shift in Uea's understanding. I.e, that the painting can be read by others.



21 Mar. Uea at the easel making patterns with lines and big dots. I asked about the pattern and he said "it's bang bang- fast, fast fast". I asked him to show me the slower and faster beats (see picture). - Tui

March 21. Here the kaiako has captured Uea's increasing intentionality about how he represents patterns.

Mar 28. Apii (Uea's dad) visited with his big pate drum this afternoon. He showed the children how to hold the stick with a loose wrist so the middle hits the middle edge of the drum. We got out our smaller drums and children joined in with these and took turns with Apii's big one. It was such fun and the children made lots of different beats. Apii finished with the fastest beat I've ever heard. Everyone was laughing!

Fakaaue lahi Apii - Asalei

RECOGNISE

Uea is increasingly intentional in the way he represents patterns through his art. He is also able to describe these patterns to his friends and kaiako - and understands that they can be 'read' by others.

Uea is becoming adept at copying simple repeating patterns when using the drums, as well as expressing himself by creating new patterns. He is also able to recognise relationships within some patterns - such as sameness, difference, repetition.

Uea is expanding his Te Pō capabilities (Kōwhiri Whakapae) and also beginning to demonstrate some Te Ao Mārama capabilities, such as being increasingly intentional in his use of maths representations to create and design.

Te Whāriki: Uea continues to recognise mathematical symbols and concepts [such as pattern] and use them with enjoyment and purpose (Learning Outcome from Te Whāriki strand: Mana reo | Communication).

Recognise

Using the Maths area of Kōwhiri Whakapae: Pattern and Relationships, kaiako recognise that Uea is expanding his Te Pō capabilities and also beginning to demonstrate some Te Ao Mārama capabilities such as being increasingly 'intentional in his use of maths representations to create and design'.

RESPOND

We will support Uea to expand maths capabilities by:

- Encouraging him to work with others to create and illustrate (represent) increasingly complex patterns.*
- Highlighting repeated elements of patterns in other mediums (such as tapa or block play) and encouraging Uea and his friends to predict the next piece of a pattern - what are the repeating elements, and do they change?*
- Encourage Uea and his friends to continue showing and explaining their patterns to others, including whānau.*

Respond

Kaiako use Kōwhiri Whakapae (Maths: Pattern and relationships) to identify some Te Pō and Te Ao Mārama practices to help them help Uea to expand his learning.

Uea the conductor

April 2025

NOTICE

April 7. Uea and his brother Sione were drumming the patu at the weekend. Uea held up his painting (lines and dots) and said "beat, beat, faster drumming". He was jumping up and down as he pointed to the 'faster' dots. Sione did as he was told! Later he made lines and dots drawing and conducted Uea. - Coral

April 10. Uea now has three line and dot paintings. One is very long with lots of repeats. He enjoys beating the pattern and is keen for friends to join him - but he gets a bit frustrated when they deviate from the beat he envisages. - Asalei

April 14. I invited Uea to share one of his paintings at mat-time today. I asked him to explain about the dots and lines. Grace asked why some dots were smaller. Uea explained that they were faster. We all stood up and did the entire sequence using leg-stamps and hands slapping on thighs. Twice through - faster the second time. See video on centre laptop - Tui

16 April. Because Uea is interested in pattern, I pointed out tapa on the wall. I asked if he could see any parts that repeated. He pointed out the diamond shapes, then noticed all the little triangles that formed lines between. The more we looked, the more we saw :) - Michelle

17 April. I cut some paper triangles and diamonds (small & big) and put them by the screen printer. Jono lined some diamonds up to make a repeating pattern, and then Uea helped him fill in the gaps with triangles. Uea "Put all the little triangles in the gaps" - Michelle

Coral, has the screen print gone home? Can't find it - hoping you have it already - Tui.

Yes,
got it
:)

Te Whāriki & Kōwhiri Whakapae links

Notice

April 7 and 10 provide evidence of Uea's current capabilities, including using paint to represent repeating elements and changes in tempo. He also knows that others can 'read' his representation.

April 14. This note makes intentional teaching (kaiako response) visible, and illustrates Uea's growing confidence to share his ideas.

April 16, 17 also illustrate intentional teaching, as well as providing evidence of Uea's growing capabilities.

22 April. Uea helped to make scones. He was most interested in organising them on the plates - 7 on each plate for a table. He arranged 6 in a circle and one in the middle. - Tui

28 April. Great day for kite flying today. We took 8 children to the park. Everyone had a turn at holding the string. - Asalei

30 April. Thanks for all your help making soup today Uea. You did so well cutting up those very thin pieces of potato :) - Michelle

Uea kept shouting 'run faster and make it go higher!' - Michelle

22 April. In this note Ana notices the way Uea arranges the scones, partly because she recognises his pattern interest.

RECOGNISE

Uea is recognising patterns and relationships in a wider variety of contexts E.g. relationships between the diamonds and triangles on tapa. He is creating patterns in different contexts using art, language, and movements, e.g. patterns with scones, and through screen printing. Uea is also using mathematical language such as 'faster / triangles / gaps' and continuing to make wonderful art that represents drum beats.

Uea is becoming more confident about sharing and explaining his ideas to others. You could see his pride at mat-time when the children followed the sequence in his painting (using leg-stamps and hand-slaps).

It's wonderful to see Uea also caring for others by helping with food preparation and serving. I think this further strengthens his feelings of belonging and helps him to build relationships with an ever increasing circle of friends. :)

Kōwhiri Whakapae (Maths): Uea is consolidating his capabilities within Te Pō. In particular, he is creating and communicating about patterns in a greater range of contexts.

Te Whāriki: Uea continues to expand his understanding of mathematical symbols and concepts and is using them with enjoyment and purpose (Learning Outcome from Te Whāriki strand: Mana reo | Communication). He is also increasingly capable of taking part in caring for this place | te manaaki i te taiao (Learning Outcome from Te Whāriki strand: Belonging | Mana whenua).

Recognise

Using the Maths area of Kōwhiri Whakapae: Pattern and relationships, kaiako recognise that Uea is continuing to expand his capabilities within Te Pō. In particular, he is creating and communicating about patterns in a greater range of contexts.

RESPOND

We will continue to support Uea's progress by:

- Providing a greater range of materials for the children to use when exploring and creating shapes and patterns. E.g. small blocks of different shapes by the outdoor easels (for printing), more cut-out shapes by the screen-printer, coloured sticks, glass beads, small tiles in the block area.*
- Making lots of opportunities available for Uea to share and discuss his ideas in small group contexts.*
- Continuing to invite Uea to help with kai preparation and serving.*
- Celebrating Uea's learning by displaying documentation, including by making videos available on the iPad, and putting photos and art on the wall.*

Hi Coral, we have developed this planned response by adapting some Te Pō practices (Kōwhiri Whakapae). E.g. "Introduce a mix of new and unfamiliar resources to explore increasingly complex patterns". Looking ahead to Te Aō Mārama practices has helped us decide to continue inviting Uea to share / discuss what he knows about patterns that interest him. Please feel free to share any thoughts or further ideas with us :)

Respond

Kaiako use Kōwhiri Whakapae (Maths: Pattern and relationships) to identify further Te Pō practices that they can adapt to help Uea to expand his learning. E.g. "Introduce a mix of new and unfamiliar resources to explore increasingly complex patterns". They also look ahead to Te Aō Mārama and decide to continue inviting Uea to share / discuss what he knows about patterns that interest him.

Revisit

After continuing to cycle through 'notice, recognise, and respond' for a further month, kaiako revisited how effective their implementation of Kōwhiri Whakapae: Pattern and Relationships 'Lay the Groundwork' practices have been for all children's learning. As part of this evaluation, they draw on Uea's assessment documentation.