



te paeroa RTL B



# Understanding Strategies to Support Neurodivergent Learners Through the Science of Learning

## Kaiāwhina Workshop Year 0-6 2026

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## The Why?

- Knowing and understanding the key concepts and characteristics related to the Science of Learning to help me in my role in the classroom
- Create a shared understanding of strategies to use that support student co-regulation and engagement in learning.





# The What?

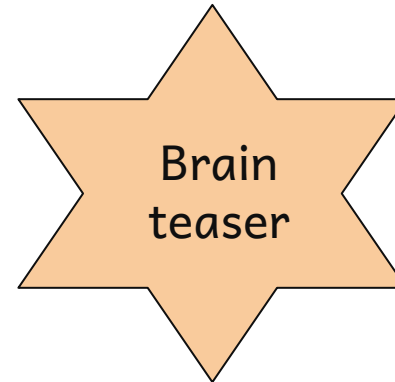
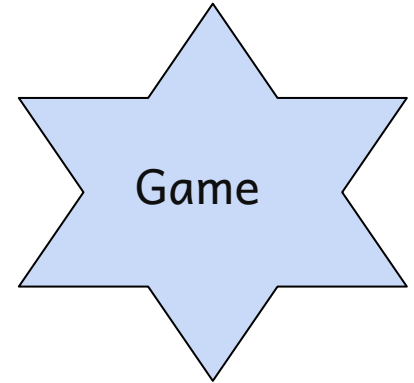
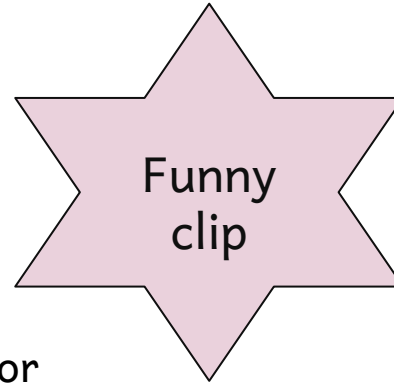
- Building Understanding
- Common Language
- The Science of Learning & Neurodivergent Learners
- What do we know?
- Five Characteristics of How we Learn
  - Sharing Whakaaro
- Three Key Ideas: Neurodiverse Learners
  - Activation
  - Managing cognitive load (overload, prevention and ways to support)
  - Cementing it in - Working Memory to Long Term Memory
- Strategies to Support Effective Learning (Take home kete)



# Positive Primers

These are priority routines that deliberately prime ākonga for learning.

Are proactive activities at the start of a day or learning period that boost positive emotion to support learning outcomes. Positive Primers can be a do now activity (ready to go as soon as students walk through the door), and can be content related, which additionally puts the focus on learning as soon as the class starts.



## TA/Kaiāwhina

What are your roles and responsibilities in your kura?  
(talk with a buddy or in small groups if this is your first year here)

Identify similarities or differences of your responsibilities

# Building understanding

**The Science of Learning applies to all brains!!!**

**Exploring the Science of Learning can help us:**

- build a shared understanding of how people learn – biologically, developmentally, cognitively, culturally, emotionally, and socially
- consider how understanding of how people learn strengthens teaching and learning
- establish a common language for teaching and learning.

**[The Neurodiversity in Education Project:](https://www.neurodiversity.org.nz/?srsltid=AfmBOorN_444CMkJABV45QRHGEraE1gzULyanp0md2Y6qiZGBZ8MReBY)**

**[https://www.neurodiversity.org.nz/?srsltid=AfmBOorN\\_444CMkJABV45QRHGEraE1gzULyanp0md2Y6qiZGBZ8MReBY](https://www.neurodiversity.org.nz/?srsltid=AfmBOorN_444CMkJABV45QRHGEraE1gzULyanp0md2Y6qiZGBZ8MReBY)**

A screenshot of a presentation slide with a video inset. The slide has a white background with colorful geometric shapes (green, yellow, pink, red) in the corners. The text on the slide reads: "The science of learning informs us about how brains LEARN. WE get to decide how to use that information to guide how we TEACH." The video inset in the top right corner shows a woman with glasses speaking. At the bottom of the slide, there are logos for "Building a Neurodiversity in Education Project" and "NEX".

The science of learning informs us about how brains LEARN.  
WE get to decide how to use that information to guide how we TEACH.

Building a Neurodiversity in Education Project

NEX

# Common Language

- Neurodiverse
- Cognitive load
- Executive functions
- Working memory
- Schema
- Explicit instruction
- Well-being



# Common Language

Neurodiverse *Kanorau ā-roro*

Those of us who have variations in how our brains work. (The many faces of the mind).

Cognitive load

Refers to the amount of information our working memory can process at any given time.

Executive Functions

Refers to skills that you use to manage everyday tasks like making plans, solving problems and adapting to new situations. The three main skills are working memory, cognitive flexibility and inhibition control.

Working memory

It is where thinking takes place, where incoming new information is connected with prior knowledge, and where both are manipulated. It has a limited capacity.

Schema

How your brain organises information (e.g., like a filing cabinet). This also includes how your brain breaks down and lumps together complex ideas to form a simple idea.

Explicit instruction

A way to teach in a direct, structured way

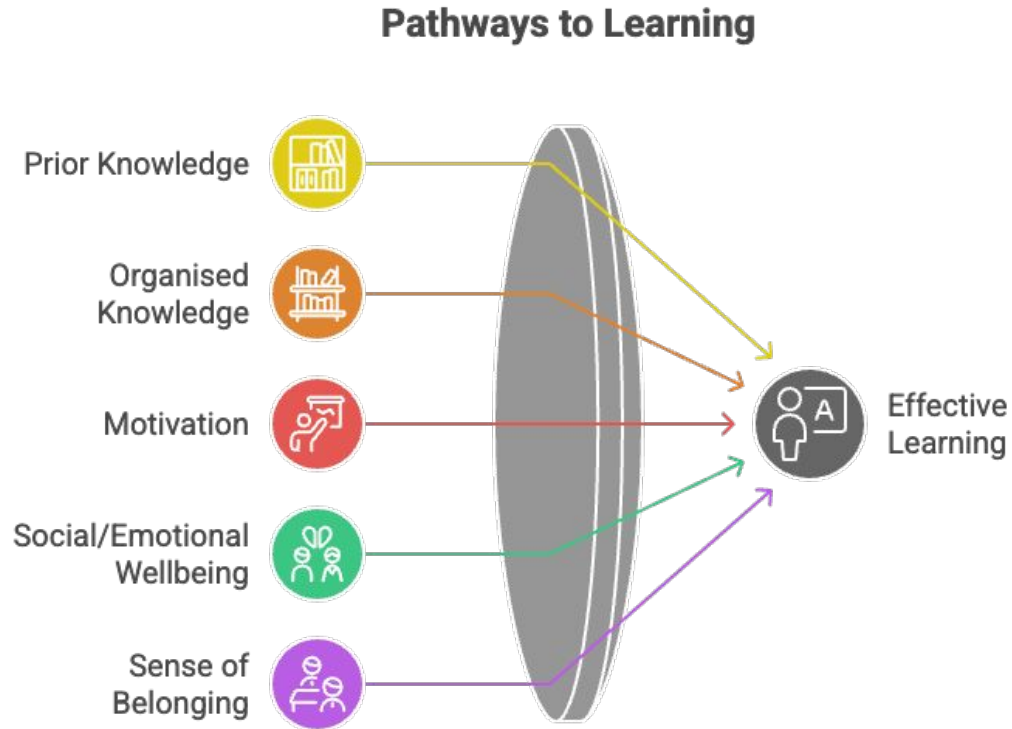
Well-being

A holistic state of physical, mental, emotional and social health within an environment that is inclusive, accepting, and tailored to meet needs and strengths



# What is the Science of Learning?

The **Science of Learning** informs both curriculum sequencing and teaching practice. By leveraging scientific understanding, the curriculum identifies **5 Key Characteristics of How We Learn**



# Sharing Whakaaro & Activating Prior Knowledge

<b>Learning Characteristic</b>	<b>Common Neurodivergent Barrier</b>	<b>Inclusive Strategy</b>
<b>Prior Knowledge</b>	Difficulty with verbal retrieval	Use visual prompts/icons
<b>Organised Knowledge</b>	Executive dysfunction	"First/Then" boards
<b>Motivation</b>	Anxiety/Demand avoidance	Incorporate special interests
<b>Wellbeing</b>	Sensory dysregulation	Provide a "Quiet Zone"
<b>Belonging</b>	Feeling "different" or "bad"	Peer-mediated social support

# Sharing Whakaaro & Activating Prior Knowledge

Think about learners you have worked with. Consider 1-2 of the barriers that can impact students' progress in their learning (The Five Characteristics of Learning):

- ★ Discuss examples of things to consider that impact the pathways to learning you may have experienced this year in the context of the spaces/classroom you have worked in

Are any of these interconnected or impact on each other?

# Three Key Ideas: Neurodiverse Learners

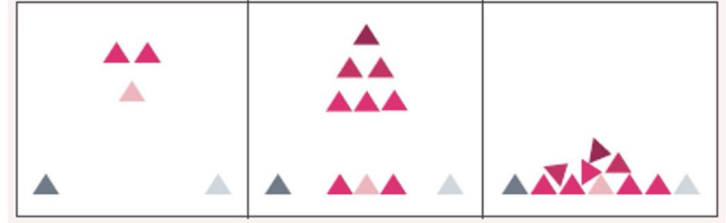
## 1. Activation

New things are learned in connection with old things. The more we know, the better we know.

Connections between ideas need to be explicit. We need to hang new information on known information and experiences (schema).

Concrete before abstract.

Our cognitive schema influences what and how quickly we can learn

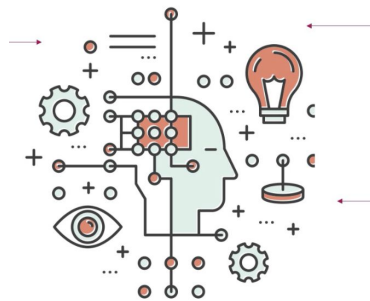


# Three Key Ideas: Neurodiverse Learners

## 2. Managing (Cognitive) Load

Brains can only do so much all at once.

Emotions and sensory input impact cognitive load.



**Brains are sequential processors:**

Sensory information



Social information



Create emotions



Then intellectual processing

# Cognitive Overload



**What might cognitive overload look like, sound like or feel like for a neurodivergent learner?**



# Cognitive Overload

**What are some ways we can help to prevent cognitive overload and/or manage when a learner is in cognitive overload?**



# Considerations to Support the Cognitive Load

Therefore, we can arrange our instruction around managing that load:

- Be **clear** about what matters and just focus on that
- Allow adequate **time and space** for what's important
- **Manage** sensory, emotional, social and attention factors, e.g., [\*Sensory Audit Checklist for Inclusive Classroom\*](#)
- Use novelty and variety as **dials** to turn up and down
- **Teaching** about attention and executive functioning in support with the kaiako
- **Refresh** the load through mini-breaks





# Brain Breaks

## What are they?

They involve taking a short break in a lesson to engage in a short burst of physical movement or mental challenge to help ākonga to self-regulate.

## How long are they?

4 minutes or less



- They can be thought of as brief ‘interruptions to the lesson that enable renewed focus on learning. They can be used to positively escalate students who may be tired, or de-escalate heightened or dysregulated students. Breaking up learning blocks provides opportunities for mental rest, which is essential for consolidating learning and memory. Opportunities for physical movement and play are associated with enhanced executive functioning and regulatory behaviour.
- Ākonga led
- Renew focus on learning
- Reinforce positive behaviours
- Co-Regulation
- Self-regulating
- Regulating Movement



# Three Key Ideas: Neurodiverse Learners

## 3. Cementing it in

The shift from shorter to long term memory is not automatic. It takes time, repetition and practice.

**Therefore we can carefully build in repetition and practice:**

- **Limited**, varied and exciting repetition of crucial ideas
- Moving from new skill in old context to **new/new**
- **Close-in-skill** partners or groups
- And...

The science of learning informs us about how brains LEARN.

WE get to decide how to use that information to guide how we TEACH.

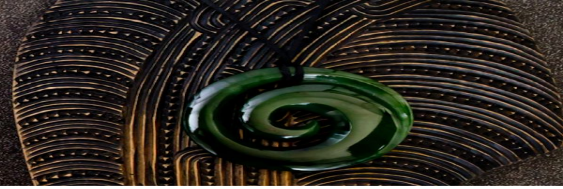
Building's Research Institute | Neurodiversity in Education Trust | NEX

## Using Te Whare Tapa Whā to Enhance Relationships with Mokopuna

<p><b>Taha Wairua - spiritual wellbeing</b></p> <ul style="list-style-type: none"> <li>● Beliefs, values, traditions</li> <li>● What is their wairua like?</li> <li>● What are their strengths?</li> <li>● What is their behaviour communicating?</li> <li>● Forms of communication?</li> <li>● Wairua adults in the space create/set as soon as you walk in (You create the beginnings of the wairua)</li> </ul>	<p><b>Taha Hinengaro - mental and emotional wellbeing</b></p> <ul style="list-style-type: none"> <li>● Engagement - in whichever area of learning they are doing</li> <li>● Strategies that are already used by kaiako that you can use</li> <li>● Barriers and challenges that prevent learning (sensory)</li> <li>● Learning</li> </ul>
<p><b>Taha Tinana - physical health</b></p> <ul style="list-style-type: none"> <li>● Self regulation</li> <li>● Movement</li> <li>● Co-regulation/self-regulation</li> <li>● Kai</li> <li>● Sleep and health issues</li> <li>● Sensory</li> </ul>	<p><b>Taha Whānau - family, friendships and community health</b></p> <ul style="list-style-type: none"> <li>● Knowing who is in the whānau</li> <li>● Important people in their lives</li> <li>● Friendships - in and outside of school</li> <li>● Community connections, e.g., Church, sporting groups, scouts, iwi hapū)</li> </ul>
<p><b>Whenua - land/learning spaces</b></p> <ul style="list-style-type: none"> <li>● Environment of the classroom and outside spaces</li> <li>● Routines</li> <li>● Learning tools</li> <li>● Whakapapa - connection to taiao</li> </ul>	



<https://mentalhealth.org.nz/te-whare-tapa-wha>



# Strategies to support ākonga co-regulation

## Relationship-Building Strategies

*Taken from NZ Autism  
– Tilting the Seesaw*



### Understand Me

2x10  
Spend 2 minutes for 10 days  
getting to know me.

### Rule of 5

Limit language to 5 and wait for  
at least 5 seconds for a reply.  
Less is more and don't  
rephrase.

### Behaviour

Understand my behaviour,  
before you try to change it.  
What is my 'why'?

### Make the Invisible -Visible

Take time to talk to me and  
visually present information to  
provide certainty and help  
identify alternatives for next  
time.





# Strategies to support ākonga co-regulation

## Relationship-Building Strategies

*Taken from NZ Autism  
– Tilting the Seesaw*



### Give me Time

Give me a safe place and time to self-regulate.  
Breaks and thinking time are important for me.

### Non-Verbals

Show me you care through your body language.  
Come up to me, smile, use gestures instead of words.

### Voice

Use a soft voice. Come up to me if you want to talk, giving me eye contact so I know you are talking to me.  
Lower your tone if I'm too loud.

### “Why”

Show me I'm your 'why'





# Strategies to support ākongā co-regulation

## Relationship-Building Strategies

*Taken from NZ Autism  
– Tilting the Seesaw*

### Acknowledge Me

Use ākongā's name  
first to cue them

### Give Positive Direction

Reframing prompts  
in a positive way

### Use "first and then"

to describe sequence

### Give Warnings

to describe sequences or when  
change is going to happen





# Strategies to support ākonga co-regulation

## Relationship-Building Strategies

*Taken from NZ Autism  
– Tilting the Seesaw*



<p><b>Communication</b></p> <p>Really listen and try to remember what you've learned about the student</p>	<p><b>Drop &amp; Go</b></p> <p>Ākonga who may be reluctant to engage in conversations</p> <p>Showing you care/are interested in them as a person</p>
<p><b>Providing Feedback &amp; Encouragement</b></p> <p>Praise effort and attempts rather than outcome</p>	<p><b>Proximal Praise</b></p> <p>Notice and comment on the positive behaviours of nearby tamariki</p> <p>Supporting incentive systems within the classroom</p>





## Strategies to support ākonga to engage in learning

- **Visuals** e.g., First/then, timetables, Visual timetable
- **Supports** e.g., Non-standard timers, Drop and go', Rule of five
- **Communication** e.g., Positive reframing, Information overload
- **Supports** around transitions





# What are visuals?

- A picture, or other visual item, as a tool, to teach skills in communication, social interaction, thinking, and behaviour.
- They can be real objects (e.g., timers or a block), photographs, written words, drawings, coloured pictures, symbols, or lists or a combination

There are many different types of visual supports, including, but not limited to, first-then boards, social stories, visual schedules, visual timers, visual boundaries, visual prompts, and visual labels. Visual supports are a practical, portable, easy-to-make, easy-to-implement tool that can be useful for a wide range of situations and across environments.



# 9 REASONS TO USE VISUALS

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@kwiens62



- VISUALS ARE PERMANENT  
(SPOKEN WORDS DISAPPEAR)



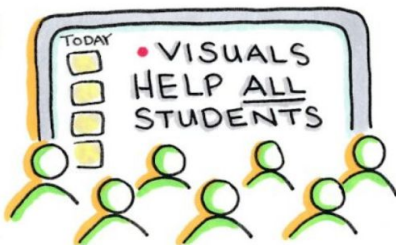
- VISUALS ALLOW TIME  
FOR LANGUAGE PROCESSING



- VISUALS PREPARE  
STUDENTS FOR TRANSITIONS



- VISUALS HELP KIDS  
SEE WHAT YOU MEAN



- VISUALS HELP ALL  
STUDENTS



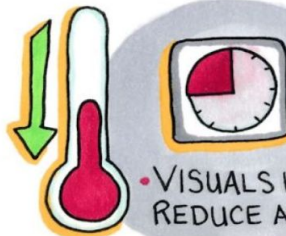
- VISUALS HELP  
BUILD INDEPENDENCE



- VISUALS ARE TRANSFERABLE  
BETWEEN ENVIRONMENTS  
AND PEOPLE



- VISUALS HAVE NO ATTITUDE  
• NO TONE • NO FRUSTRATION  
• NO DISAPPROVAL



- VISUALS HELP  
REDUCE ANXIETY

Kristin Kwiens 2017





# Identifying the Visual Support Needed

## Schedules

What does the student struggle with?

- ❖ moving from one area to the next?
- ❖ Forgetting what happens next?
- ❖ inappropriate behaviours during transitions?



## Visual Boundaries

What does the student struggle with?

- ❖ staying in one place?
- ❖ leaving a location because of frustration?
- ❖ easily distracted?
- ❖ invade others' workplace and use materials belonging to other students?

## Cues

What does the student struggle with?

- ❖ starting an activity, staying on task, knowing what to do when finished?
- ❖ working independently?
- ❖ understanding instructions when only provided verbally?
- ❖ Staying calm? Does the activity cause frustration?



# What can support effective learning?

## The role of explicit instruction



Chunking new information



Ask questions, check for understanding



Provide models or worked examples



Guide student practice



Scaffold challenging tasks



Independent practice



Daily, weekly, monthly review

What might this **look like**, **sound like** and **feel like** for neurodivergent learners?

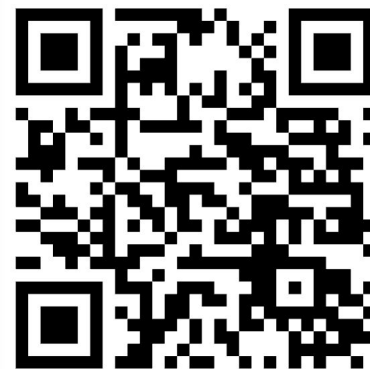
In your role, how might you be able to **support** some of these strategies?

Which of these strategies may be more **challenging** in your role?





**He kai kei aku ringa**  
There is food at the end of my hands



*This whakatauki signifies resilience, empowerment and hope.  
It refers to one's ability to use the skills and resources they have to create success.  
It's about being responsible for the resources and capabilities  
one needs to grow and develop.*



## References

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