2019 Analysis of Variance of Student Achievement Targets

Target 1: Mathematics

We have selected a cohort of students from Year 5-8 who were working below the curriculum level expectation for their Year group.

The 2018 data was measured using 3 curriculum sublevels. These children were, using this measurement, 1 or 2 sublevels below expectation. Whilst they were not deemed to be 'Well Below" using the old National Standards measures, they are at risk of falling further behind without specific attention and focus.
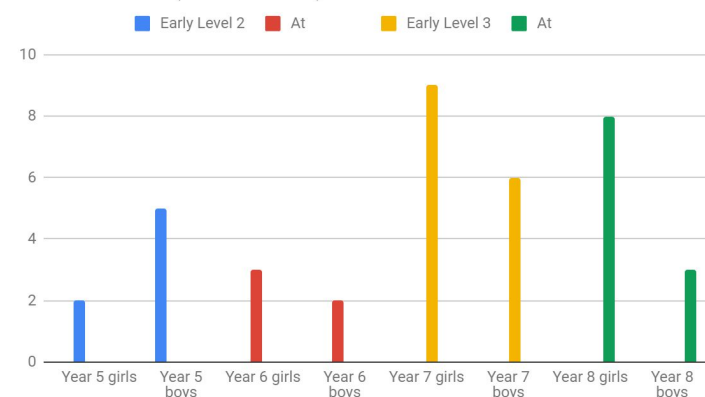
Cohort:
(n=38) Year 5-8 students working below their curriculum level for their year level.

Goal: To **accelerate** (increase by 2 or more sub-levels) the achievement of the cohort group from Year 5-8 who have been identified as working below their curriculum level for their year level in maths. These are our expectations (targets) for these students:

| Year level (2019)	End of 2018 level	Mid 2019 level (likely to be the same/similar to end of 2018)	End 2019 level
5	Early Level 2 (towards Level 2)	Early Level 2 (towards Level 2)	At Level 2
6	At Level 2	At Level 2	Early Level 3 (working towards Level 3)
7	Early Level 3 (towards level 3)	Early Level 3 (towards level 3)	At Level 3
8	At Level 3	At Level 3	Early Level 4 (working towards Level 4)

Baseline Data	Early Lev. 2	At Lev. 2	Early Lev. 3	At Lev. 3	Early Lev. 4
Year 5 girls	2				
Year 5 boys	5				
Year 6 girls		3			
Year 6 boys		2			
Year 7 girls			9		
Year 7 boys			6		
Year 8 girls				8	
Year 8 boys				3	

Baseline Data (end of 2018)

Māori & Pasifika (sub-cohort). Due to there only being one Pasifika student, we have combined this data to avoid identification of any students.

Māori & Pasifika	Early Level 2	At Level 2	Early Level 3	At Level 3	Early Level 4
Year 5 girls	0				
Year 5 boys	1				
Year 6 girls		1			
Year 6 boys		1			
Year 7 girls			1		
Year 7 boys			0		
Year 8 girls				3	
Year 8 boys				1	

Māori (n=7) & Pasifika (n=1)
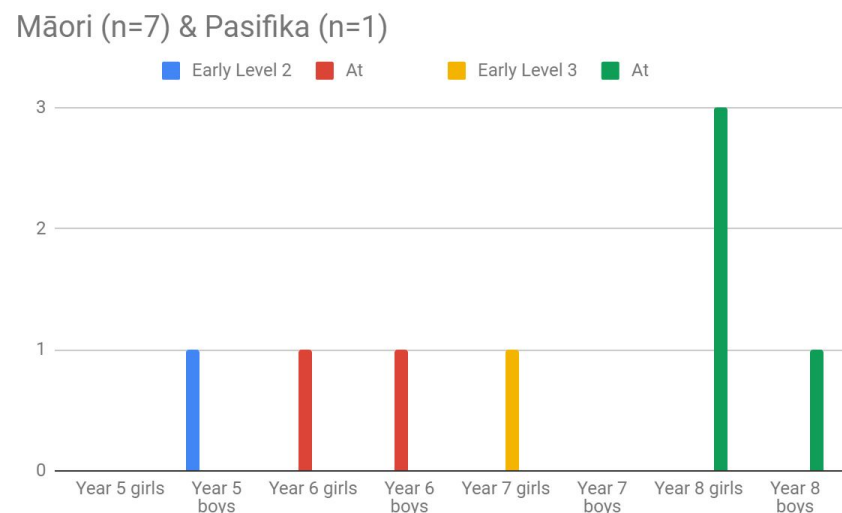
Action Plan:
In 2019 we are in our second year of working on Developing Mathematical Inquiry Communities.

Year 5/6:
As well as participating in DMIC teaching groups, the teachers are also using the following specific strategies to support the acceleration of these target students:
- Targeted SumDog activities - this programme supports the identification of areas of strength and need, and focuses learning on areas of need. Teachers monitor and support this on a weekly level.
- Targeted Group workshops (Thursdays) - Students with particular needs are supported in a targeted weekly teaching workshops
- A number of these students are also getting support from Teaching Assistants during mathematics time

Year 7/8:
As well as participating in DMIC teaching groups, the teachers are also using the following specific strategies to support the acceleration of these target students:
- Maths Whizz - this programme supports the identification of areas of strength and need, and focuses learning on areas of need. Teachers monitor and support this on a weekly level.
- Targeted Group workshops (Thursdays) - Students with particular needs are supported in a targeted weekly teaching workshops

- Small Target Group - some of the target cohort are also in a targeted small teaching group on Mondays.

Results:

Target Group - End of Year Results (n 37 as one student left)

| End of Year	Early Lev. 2	Mid Lev. 2	Late Lev. 2	Early Lev. 3	Mid Lev. 3	Late Lev. 3	Early Lev. 4	Mid Lev. 4	Late Lev. 4
Year 5 girls		2							
Year 5 boys		1	3						
Year 6 girls			2	1					
Year 6 boys			1	1					
Year 7 girls				2	4	1	2		
Year 7 boys					1	5			
Year 8 girls						2	6		
Year 8 boys							2	1	

Target Group End of Year Data 2019
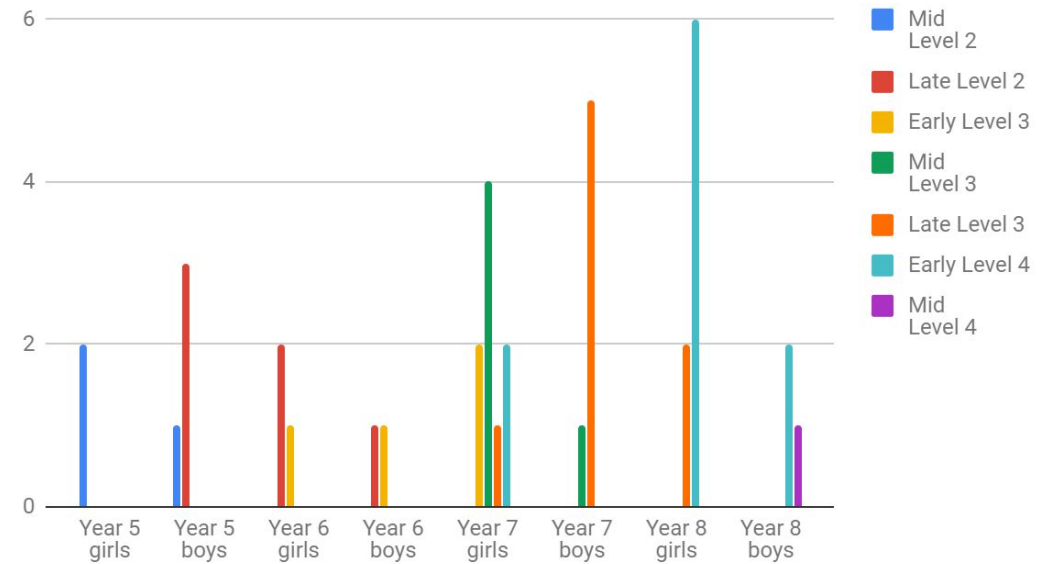
Target Group - Sublevel Change From End of 2018 to End of 2019

2 or more sublevels in achievement is usually considered to be 'accelerated' progress.

End of Year	Left School	No Change	1 Sublevel Change	2 Sublevels Change	3 Sublevels Change
Year 5 girls				2	
Year 5 boys	1		1	3	
Year 6 girls			2	1	
Year 6 boys			1	1	
Year 7 girls		2	4	1	2
Year 7 boys			1	5	
Year 8 girls			2	6	
Year 8 boys			2	1	
Total	1	2	13	20	2

## Sublevel Change: End of 2018 - End of 2019
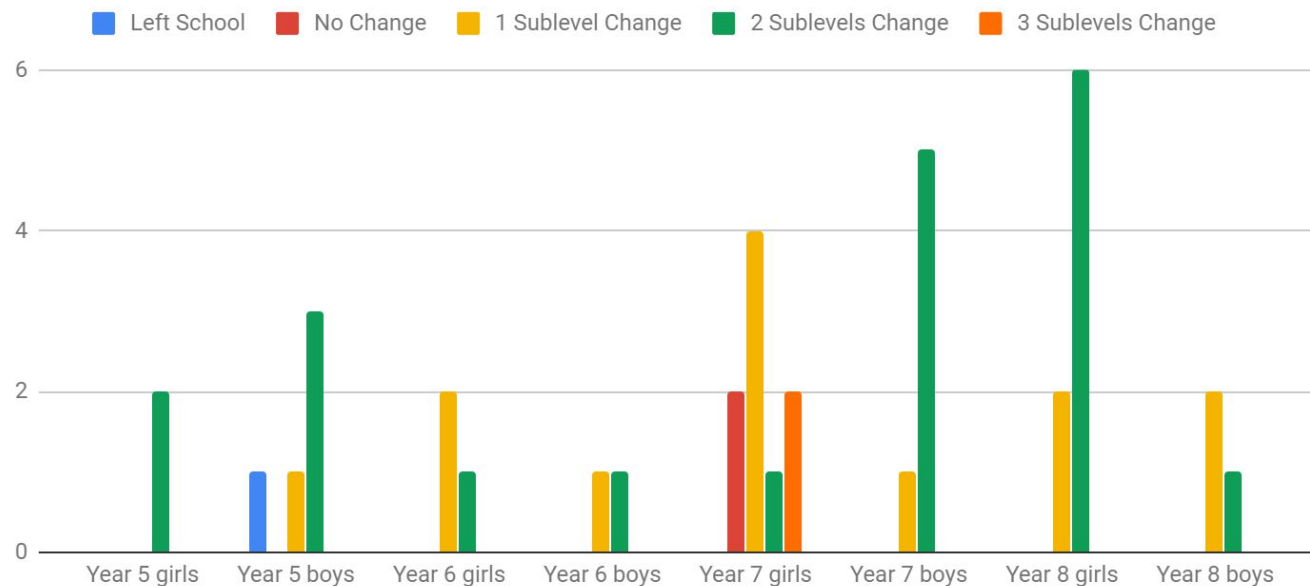
Māori & Pasifika Sublevel Change From End of 2018 to End of 2019.

Due to there only being one Pasifika student, we have combined this data to avoid identification of any students.

End of Year	Left School	No Change	1 Sublevel Change	2 Sublevels Change	3 Sublevels Change
Year 5 girls					
Year 5 boys					
Year 6 girls			1		
Year 6 boys			1		
Year 7 girls				1	
Year 7 boys					
Year 8 girls			2	1	
Year 8 boys					1

Māori & Pasifika Sublevel Change - End of 2018 - 2019
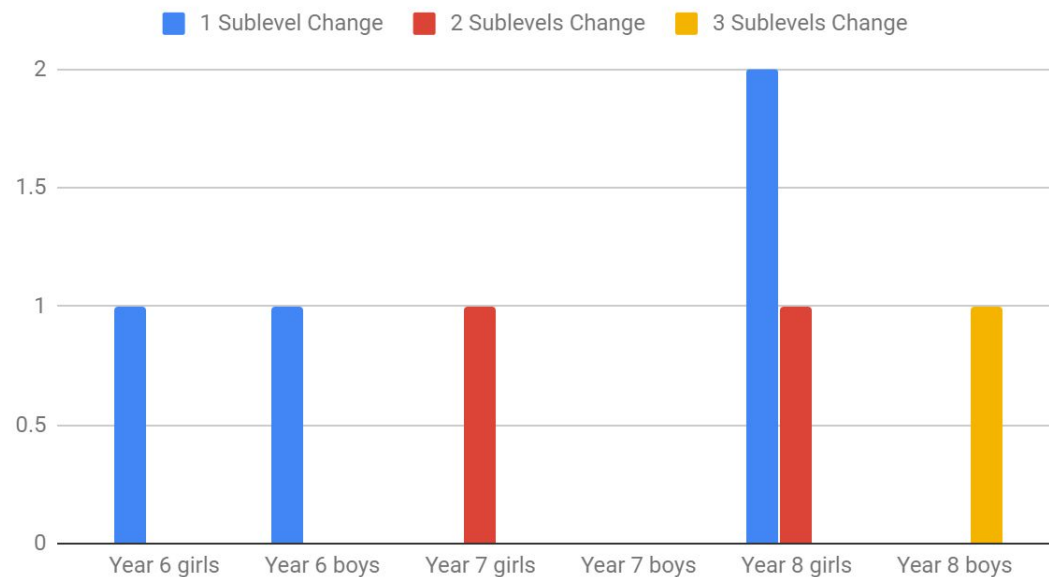
Analysis

Overall, most students in the target cohort improved by one to two sublevels. In the past, these students had improved at a much slower rate.
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- Year 5 girls: 2 students increased 1 sublevel
- Year 5 boys: 1 left, 1 student increased 1 sublevel, 3 students increased 2 sublevels
- Year 6 girls: 2 students increased 1 sublevel, 1 student increased 2 sublevels
- Year 6 boys: 1 student increased 1 sublevel, 1 student increased 2 sublevels
- Year 7 girls: 2 no change, 4 students increased 1 sublevel, 1 student increased 2 sublevels, 2 students increased 3 sublevels
- Year 7 boys: 1 student increased 1 sublevel, 5 students increased 2 sublevels
- Year 8 girls: 2 students increased 1 sublevel, 6 students increased 1 sublevel
- Year 8 boys: 2 students increased 1 sublevel, 1 students increased 2 sublevel

1 student left during the year.

Overall, the average increase across all 37 students was 1.6 sublevels. Given that, over two years, students need to make approximately 3 sublevels progress to maintain expected achievement, these results, on average, were showing sufficient progress for students to maintain their achievement levels.

Saying that, 59% of the students made 2 or more sublevels of progress which will certainly maintain or accelerate the progress of that group.

Factors that correlate to the increase in sub-levels for the cohort group include:
- Experienced teachers working collaboratively
- 2 years of DMIC PD for majority of teachers
- Wellbeing and maturity levels of students has increased and evolved in Year 7/8
- Students' confidence levels have increased around maths
- Targeted teaching to students in cohort group along side DMIC group problem-solving

What are Our Next Steps?
- Continue with our PD plan with DMIC.
- Continue the Maths-Whizz programme in Year 7/8.
- We will have additional PD on Learning Progressions/Assessment and DMIC for new teachers.
- Continue with the DMIC mentoring sessions.
- Explore how we are assessing DMIC.

Target 2: Diverse Learners and Wellbeing

Goal

To improve the wellbeing, and therefore the achievement, of a cohort of students who have been identified as neurodiverse and not achieving to their potential across the curriculum. The strategies that we are using for this cohort, will be replicable for all our diverse learners, and we are predicting to see improvement for all of our diverse learners through this goal.

Cohort:

Around three Neuro-diverse students from each team have been selected as the target group, based on identification of needs. Some of these students have a diagnosis of Autism Spectrum Disorder (ASD) whilst others have markers but are not formally diagnosed. All have had challenge in accessing and engaging in learning across the curriculum as a result of significant challenges in one or more areas of behaviour, social and emotional regulation and, as a result, are not achieving to their potential.

The students in this cohort are representative of a number of others in the school. They require significantly more support than neuro-typical students in areas of wellbeing (social, emotional and behaviour) which impacts on their ability to learn. Some of these students are well behind in their learning, compared with peers. Others are keeping up with peers yet, we believe, have potential which is not being realised.

Actions
- Introduction across the school of interoception exercises, 2-3 times a day in every learning group - *"Interoception is an internal sensory system in which the internal physical and emotional states of the body are noticed, recognised/identified and responded to. Interoception skills are required for a range of basic and more advanced functions such as knowing when to go to the toilet, being aware that you are becoming angry or upset and being able to manage your emotions proactively. When children and students have not yet developed interoception skills they will struggle with not only their own emotions but with social interactions and even just being around others may be difficult for them to manage." Goodall, Interoception 101, 2016*
- Consistent use of Visual Timetables across the school (Horizontal versions)
- Professional development for all staff in understanding and responding to students with Austism Spectrum Disorder.
- Use of social stories across the school to prepare and support students with new and unknown experiences
- Work with RTLB to undertake a combined project on this topic. Part of the data collection will involve undertaking a survey through NZCER and our staff will be trained to analyse this data and make links with current research.

Expected Outcomes/Targets

The outcomes for each student will be different - such is the nature of neurodiversity. Across our school we are looking to increase wellbeing for our neurodiverse students. Some of the data we will use to measure this will include decrease stand-downs and increase in attendance. We will also collect data from observations and anecdotes and expect to see decreases in requests to senior staff for behaviour support and increases in friendship success. The outcome target for all students is increased engagement with learning activities, and the result of this should be then able to

be seen in improvements in their achievement data in reading, writing and mathematics, although we are not necessarily expecting this to be visible for all students in one year.

Student Data
*NB: *The data, as presented below, is a summary. Due to the nature of this cohort, we have removed gender, ethnicity, stand downs, attendance, engagement with other external agencies, and other markers that might identify individual children. These are summarised under *Other concerns.*
Achievement data below expectation for year level

ID	Year level	EOY Reading 2018	EOY Writing 2018	EOY Maths 2018	Significant Behaviour Support Needed 2018	Significant Social/ Emotional Support needed 2018	RTLB 2018	*Other concerns
101	1	L3 Red	>1B	1B	Yes	Yes		Yes
102	1	(NE)	(NE)	(NE)	(new)	(new)		Yes
103	1	(NE)	(NE)	(NE)	(new)	(new)		Yes
104	2	L3 Red	1B	1B	Yes	Yes	Yes	Yes
105	3	L16 Orange	1P	1P				Yes
106	3	L5 Red	1B	1B	Yes	Yes		Yes
107	4	2P	1A	2B	Yes	Yes		Yes
108	5	2P	1A	1A	Yes	Yes	Yes	Yes
109	5	L9 Blue	1P	2A	Yes	Yes	Yes	Yes
110	5	3P	3P	2A	Yes	Yes	Yes	Yes
111	6	4P	3A	3P	Yes	Yes	Yes	Yes
112	6	3B	3B	2A	Yes	Yes	Yes	Yes
113	7	(new)	(new)	(new)	(new)	(new)		Yes
114	8	3A	3A	3A	Yes	Yes		Yes
115	8	4A	4P	4P	Yes	Yes		Yes
116	8	4P	4P	3P	Yes	Yes		Yes

Results

ID	Gender	Year level	EOY Reading 2018	EOY Reading 2019	EOY Writing 2018	EOY Writing 2019	EOY Maths 2018	EOY Maths 2019
101	Male	1	L3 Red	L7 Yellow	>1B	1B	1B	1B
102	Male	1	L 3 Red	L18 Turquoise	1B	1P	1B	1P
103	Male	1	(new 2019)	L12 Green	(new 2019)	1B	(new 2019)	>1B
104	Male	2	L3 Red	L4	1B	>L1	1B	1B
105	Male	3	L16 Orange	L21 Gold	1P	1A	1P	2B
106	Male	3	L5 Red	L8 Yellow	1B	1B	1B	1A
107	Male	4	2P	2A	1A	2B	2B	2P
108	Male	5	2P	2A	1A	2P	1A	1P
109	Male	5	L9 Blue	L14 Green	1P	1B	2A	2P
110	Male	5	3P	4A	3P	4B	2A	3A
111	Female	6	4P	4A	3A	4B	3P	4B
112	Female	6	3B	3B	3B	3B	2A	3B
113	Female	7	(new 2019)	4A	(new 2019)	4P	(new 2019)	3A
114	Male	8	3A	4P	3A	3P	3A	4B
115	Female	8	4A	5B	4P	5B	4P	5B
116	Male	8	4P	4A	4P	4A	3P	4P

Increase in achievement since EOY 2018

- 100% of the neurodiverse students who had start of year data increased their achievement levels in 1 or more areas.
- 50% neuro diverse students increased their achievement level in 3 areas
- 38% neuro diverse students increased their achievement level in 2 areas

- 6% neuro diverse students increased their achievement level in 1 area
- 6% neuro diverse students were not able to be measured as new to Beckenham in 2019

Stand downs

3 students were stood down in 2018 from our target group. 2 target students were stood down in 2019. However, across the school, we had a significant drop in stand-downs in 2019 which is very pleasing.

Year	Number of Stand downs across the school
2016	8
2017	9
2018	10
2019	6

Attendance

62% of the neuro diverse students had attendance rates of 90% and above for 2019. There were no significant changes in attendance for the cohort from 2018 - 2019. Factored into attendance are holidays during term time, medical appointments, sickness.

Wellbeing (from survey results, Years 5-8 students in the Neurodiverse target group and full project group)

We surveyed the target group together at the start of the year, but were not able to separate out the neurodiverse group data.

At the end of the year, the neurodiverse and neurotypical groups were surveyed separately which enabled us to look at the neurodiverse group separately

- 80% feel they have positive relationships with the staff and school
- They have become more aware over the course of the year how their interests are being met, supported and encouraged. This is also a possible next step for teacher development in 2020.
- Teachers and students care for each other
- 70% feel a sense of belonging in class
- 70% feel the staff listen to their ideas
- 70% acknowledge that their teachers let them know it's okay to be different from other people
- 70% agree that at school, they learn to get along with people

Engagement

A time sample of engagement was carried out at the start and end of the year.

64% of neuro diverse students were engaged in the school environment at the start of the year, 91% were engaged at the end of the year.

To increase engagement for the neuro diverse students has been a large part of the project. That the neuro diverse students' level of engagement in the learning environment has dramatically increased, is a testament to the work that has occurred this year.

Other learnings and findings:

Whilst the data shows a small window into the progress that these learners have made, there have been substantial areas of progress that are not measurable from the original data set collected.
These include:
- Transition slideshows have been prepared by teams at the end of the year to provide information on neuro diverse students. THis is to assist with smooth transitions to new teacher/teams in 2020 the year
- End of year ILPs - now include the outgoing and the incoming teacher, along with whānau and TL - HUGE investment
- Project write up in the Education Gazette link
- Working with NZCER to analyse survey data provides feedback and feed forward
- Teachers have continued to develop strategies to support students, particularly during times of anxiety, over sensory etc
- The rich learning and conversations around how teachers can better support them
- Targeted responses to children
- Teams working together to identify ways to support students
- Increased shift in teacher confidence in using strategies that meet the needs of diverse learners

What next?

From the learning, comes next steps. QUestions and next steps for 2020 include:
- Engagement has increased, so how do we meet the learning needs?
- Use Effective Pedagogy (NZ Curriculum pg 9) - How are we meeting the needs of the learner?
- What capabilities do we need to teach students in order to participate more and become involved?
- How can we enhance the relevance of new learning for the students?
- Continue to put the learner at the centre
- Continue to upskill teachers in 2020 by working with Team Leaders around how to have effective conversations about these students, to influence learning and engagement.
- Think about strategies being taught from different points of view, to enhance learning