



## **ANALYSIS of VARIANCE 2020**

### **Ngunguru School**

The expectation of the Ministry of Education is that schools measure pupil attainment against Expected Standards (National Curriculum Levels). That information is provided here in both a written and a tabular form.

#### **Foreword**

The data presented in this analysis of variance is based on teacher overall judgments (OTJ's) against the New Zealand Curriculum expectations for the 2020 school year. It should be noted however that this year was subject to many disruptions. Covid-19, higher than usual absenteeism and school specific building and wellbeing disruptions that are all difficult to quantify against usual patterns of achievement.

Our school staff has however continued to invest considerable time into moderating our teacher judgements. This has been both within our own staff and with external facilitation (particularly in Reading and Writing) to ensure they are as accurate as possible. In developing our OTJ's at Ngunguru, we currently rely on multiple sources of data to ensure the greatest accuracy possible. We are confident that with school wide consistency of teacher understanding, external moderation and self review our professional judgements will continue to provide accurate assessments of student learning.

#### **What is the analysis of variance?**

In the plans and targets set out in our charter, the Board describes the school's priority learning areas and our expectations for improved student outcomes. The core business of the school is to raise student achievement, but the Board can also potentially set related objectives about such things as attendance or harassment etc. The Board could also potentially identify other priorities, objectives and targets relating to staff and Board capacity, finances, and property as detailed in our operational plan. At Ngunguru we have focused particularly on Mathematics, Reading and Writing for the past 3 years in our analysis.

In the annual report the Board presents, amongst other documents, an "analysis of variance" which describes for the community how the school has addressed the annual learning priorities and details how successful the approaches have been. The variance report describes the outcomes of initiatives

that prioritized the way the school resources are used. In order to be able to analyse progress towards school achievement targets, the school has collected data and evidence on student progress and outcomes.

A close look at this data is part of our teaching inquiry cycle to identify changes to our programmes in order to improve these outcomes .

Our analysis of variance is the starting point for self-review of student learning.

The information in the 2020 Ngunguru School Analysis of Variance is presented below.

1. Writing
2. Reading
3. Mathematics
4. National /Regional Comparison (no longer available)

During 2020 Ngunguru school continued its partnership with our local iwi and employed Maori staff to provide:

1. Weekly Te Reo language instruction and Tikanga and Te Ao Maori instruction. This was facilitated across 2 days weekly and Ngunguru has been audited and assessed at Level 4B Maori language funding. This staff member alongside our HOD maori also supported our Leadership programmes and and pastoral care work with our Maori students.

2. Kapa Haka tuition and event performance across years 5-8

## **Progress Comment**

### **Special needs:**

Ngunguru School, as at 'end of year' 2020, had the following students with identified barriers to learning. This should be considered in the context of student population, achievement and progress. All of these students' results have been included in the below narrative and school wide data.

### GSE Special education needs students

The allocation of LSC resource has seen a significant increase in our capacity to identify and provide additional support programmes for students with identified needs.

In 2019 Ngunguru school had 35 students with diagnosed special needs. In 2020 we had identified and programmes in place for **64** students . This represents 22%of our roll and includes:

### Orrs /GSE funded

5 Students      3 Male  
                         2 Female

Hearing (with aids)

3 Students    2 Male  
                  1 Female

Vision

1 Student    1 Male

Apraxia

1 Students    1 Male

Tourettes

1 Students    1 Male

Speech Therapy

4 Students    2 Male  
                  2 female

Dyslexic students

2 Students    2 Male

Occupational Therapy

5 Students    3 Male  
                  2 Female

ESOL – funded students

17 Students    11 Male  
                  6 Female

Autism Spectrum

7 Students    3 Male  
                  4 Female

APD

2 students    2 Male

ADHD

4 Students    4 Male

MOE Psych

2 Students    1 Male  
                  1 Female

### Other Barriers

6 Students    5 Male  
                  1 Female

These students collectively represent 36% of our below students in Reading, 42% of our below students in Writing and 33% of our students below in Mathematics.

The below table outlines the students at Ngunguru who have been identified, diagnosed and who are receiving additional learning support. This table outlines by gender and total how many students in each year group have received this support in 2020.

Table 1: Year group breakdown of support:

Year	Boys	Girls	Total
Year 1	4	2	6
Year 2	4	2	7
Year 3	7	7	14
Year 4	5	4	9
Year 5	6	3	9
Year 6	10	2	12
Year 7	3	2	5
Year 8	1	1	2
TOTAL	41	23	64

## Ngunguru School Achievement Targets

**Focus: Literacy - Writing**

**Analysis of Variance**

### Strategic Aim:

To raise student achievement in Writing and accelerate progress for students Below to meet curriculum expectation.

### Annual Aim for 2020:

**Curriculum Development - Writing - To have 85% of students operating at or above the 'Expected Curriculum Level' in writing.**

### Baseline

At the end of 2019 writing achievement data showed that 80 % of all students were achieving *at* or *above* the expected curriculum standards.

2019	%
Year 1	78.0%
Year 2	96.0%
Year 3	66.0%
Year 4	88.0%
Year 5	63.0%
Year 6	86.0%
Year 7	81.0%
Year 8	76.0%

### Target 2020:

To raise the level of student achievement in writing:

- By the end of 2020, 85% of all year groups will achieve *at* or *above* the Expected Curriculum Level.

**Actions:**

- Whole school facilitated PLD - Year 1. Write that Essay
- Teacher 'in house' professional development in spelling and punctuation.
- Continuing development of 'across school' intervention model based on the ALL writing contract
  - Intervention remedial writing at 3 strategic levels within the school.
- PLD changes in class, team and school-wide practices
- Expectations from the leadership team required clear, explicit differentiation in planning for writing.
- Writing teacher inquiries to focus on the teaching of writing with a spelling and punctuation focus.
- Teachers used modelling books to share the process of learning and clarify student understanding.
- Teachers formative feedback to students and discussions around success criteria to maintain progress.
- Student discourse and voice encouraged in all aspects of the writing process.
- Moderated Assessment and analysis of writing through e-asttle writing matrices
- Students learning to identify and use evidence to assess writing.
- Maintaining on-going, critical conversations between teachers and between teachers and leaders (open to learn)
- Student engagement in writing surveyed - beginning and end of year.

**Outcomes:** End of year data from 2020 shows our annual target **was not met with 82 % of all students achieving at or above the Expected Levels. This represents a 3% deficit on our target of 85% but a pleasing +2% gain on 2019 results.**

Writing				
	At or Above			Cohort % Change
Year	2018	2019	2020	+/-
Year 1	93.0%	78.0%	79%	
Year 2	78.0%	96.0%	79%	+1
Year 3	76.0%	66.0%	92%	- 4
Year 4	72.0%	88.0%	80%	+14
Year 5	80.0%	63.0%	82%	-6
Year 6	94.0%	86.0%	75%	+12
Year 7	73.0%	81.0%	88%	+2
Year 8	93.0%	76.0%	86%	+5

**Reasons for the Variance:**

- Aspirational target. Note minor increase in performance but covid disrupted year.
- Adaption to new learning environment. Year 1,3-4,5-6 moved into new Innovative Learning Environments.
- Time needed to embed collaborative teaching practice changes
- Students are less able to transfer writing capabilities across the curriculum. Very pleasing e-asttle results but not backed up in OTJs
- School cohorts
  - Year 4&6 - low academic cohorts - the further up the school the wider the academic gap becomes
  - low academic new entrant enrolments
- Year 6 academic cohort reduced in year 7 due to alternate Intermediate school choices by parents. ( Academic loss)
- Continued challenge with shifting spelling and punctuation
- Maintaining most levels due to: Target students benefiting from in class focus writing groups
- Better staff understanding of the writing curriculum at specific year levels
- Consistency in moderating expected standards
- Consolidated understanding of writing assessment tools
- Engagement with Write That Essay

**Evaluation and plans for End of 2020:**

**Areas of strength**

- 82% At or Above expectation
- 29% students Above EL for whole school ( 30.% 2018)
- Performance above regional and national expectation (on last MOE data)
- Very high student engagement results in e-asttle (75% plus)
- Year 0 and 1, Literacy push achieving no Well Below students
- Year 4 - 42% Above
- Year 6 - 41% Above
- Year 7 - 41% Above
- Strong female performance
  - Only 10% females Below
  - 38.0 % female students Above EL for whole school (31.8 % 2017)
  - 55% yr 8 female Above
  - 43% yr 7 female Above
  - 42% yr 4 female Above
- Strong male performance in yr 6, 38% Above
- Strong Maori performance at multiple years
  - Female 50 % above

- o Year 2 – 100% At (5 students)
- o Year 4 – 93% At or Above expectation
- o Year 7 – 87% At or Above
- o Year 8 – 84% At or Above, 48 % Above
  - +12% Gain in year 6. Strong improvement in boys.

### **Areas for improvement**

We note a minimal 2 % increase across the board from 2019

- Year 3 - 66% At or Above
- Year 5 - 63% At or Above (low academic cohort)
- Students Below (50) across all years
- Students Below in Year 3 (10) in Year 5 (15)

Gender

- Male v female disparity: Below Male 28% (35% 2017) v Female 12% (17% 2017)
  - o Males Below in Year 3 (7 of 10) and Year 5 (11 of 15)
  - o Female strong in years 4,6,7 & 8 (48% - 67% above)

Maori

- o All Maori students Below: 30%
- o Year 1 - 67% (2 students)
- o Year 5 - 83 % (5 students)
- o Year 6 - 55% (6 students)

### **Whole school Targets/Actions for Writing 2021**

- Continue with 2021 implementation of whole school/Col writing PLD - 'Write that Essay'
- Employ HoD and lead team "Write that Essay" in-school teacher
  - o Share across COL expertise in writing (WTE)
- Induct new staff into WTE
  - o Continue to monitor progress and WTE impact on spelling and punctuation progress
- In school 'Curriculum Support' staffing remedial and extension programmes implemented.
- Implement whole school writing N'ALLs model Term 2 as per Curriculum Achievement plan. Target students identified for intervention at year 2, 4, 7 /8
- Continue building leadership capability through leadership and staff pedagogy PLD in order to strengthen internal capacity for sustained professional learning – facilitator and leaders planning and co-leading intro staff meetings to look at 2021, and PLD half-days related to literacy content knowledge (term 1-4) Integration of current effective pedagogy to 'Write that Essay'
- Continue to develop leadership capability to lead change (continue current

focus on use of practice analysis with leaders and teachers in Term 2-4 ), in order to raise student achievement

- Review and moderate use of e-asttle writing tool to enable better tracking and monitor student achievement and progress. Continue with this as main writing assessment.
- Review 'Write that Essay' assessment format, possible use instead of e-asttle
- Continue to build teacher knowledge of writing rubrics, process and progressions of writing to inform teaching practice as well as assessment literacy – review; tool, marking, moderation of writing (term 3)
- Based on obs term 1-4 2021 continue teacher inquiry for target groups to promote accelerated shift in student learning to narrow the achievement gap with a result of having them move closer to meeting the expected curriculum level. Teacher inquiries to focus on 'writing'
- Review use of student engagement initiative with focus groups to track acceleration (not completed). Target Boys and Maori Boys 2021 (year 5 and 7 cohorts 2021)
- Implement key competency intervention for identified year 1-2 students

**Strategic Aim:**

To raise student achievement in Reading and accelerate progress for students Below to meet curriculum expectation

**Annual Aim for 2020:**

To have **85%** of all Students operating at or above the Expected Curriculum Level in Reading.

**Baseline****Data 2019:**

At the end of 2019 Reading achievement data showed **91.0 %** of all students were achieving *at or above* expected curriculum levels.

2019	%
Year 1	66%
Year 2	83%
Year 3	90%
Year 4	91%
Year 5	94%
Year 6	86%
Year 7	100 %
Year 8	100%

**Target 2020 :**

To maintain/raise the level of student achievement in reading:

- **By the end of 2020, 85% of all year groups will achieve *at or above* the expected Curriculum Levels**

**Actions:**

- All remedial reading students identified
- In class and withdrawal reading support for all 'well below' students
- Staffing of reading recovery for 6 year olds achieving 'well below'
- Formative practice: Teachers feedback to students and discussions around success criteria to maintain progress
- Moderated assessment and analysis of reading through Probe, Star and PAT
- In-class target groups established
- Linking, making connections of WTE (writing) to Reading

**Outcomes:** End of year data from 2020 shows the school met our target with **87.0 %** of all students achieving At or Above the Expected Levels. This also represents a 4% drop on the previous year but 2% achievement above set target. The below table illustrates cohort achievement by school year.

Reading				
	At or Above			Cohort % Change
Year	2018	2019	2020	+/-
1	74%	66%	69%	n/a
2	71%	83%	78%	+12
3	87%	90%	81%	-2
4	88%	91%	89%	-1
5	79%	94%	89%	-2
6	100.0%	86%	95%	+1
7	89%	100 %	92%	+6
8	100%	100%	100 %	0

**Reasons for the Variance:**

- Disrupted year with covid related health, absenteeism, building and environmental factors.
- Unable to staff Reading Recovery in 2020
- Whole school 'Reading' focus formative practise pedagogies embedded alongside writing focus PLD
- Continued teacher focus on Reading target students (Below and Well below)
- Consistency and effectiveness of reading teaching across the school has ensured stable and generally improving across years growth in same cohorts
- Whole school approach to 'target groups' and targeted interventions in 2017-20 and strong reading /writing links is seeing shifts in Well Below students
- Continuing pattern of low entry cohorts and early literacy issues
- Our reading interventions do not operate in year 1

- Social paradigm: Pre school entry and reduced oracy in new entrants

## Evaluation and plans for End of 2020:

### Areas of Strength

- Significant increase in yr 1 2019 cohort performance.
- 38 students increased +1 'level' shifts in reading
- 62% students reading Above EL (expected levels) across whole school. Up from 56% in 2017
- Strong performance across all year groups 3-8
- Years 6,7 & 8 - all above 90% At or Above
- Only 2 Ors below students in year 7&8 (2nd year)

### Maori achievement

- 39.0% Maori students reading Above EL for whole school
- 85% Maori At or Above against 79% in 2018

### Areas for improvement

- 6 individual negative -1 level shifts; 4 of those in the after 2 year cohort
- Year 3 Below (6 students, 2 female 4 boys)
- Targeting all 'Below and Well Below students
- Well Below is only 2 students in the school
- Achievement pattern for students shows similar disparity for gender as at 2019: At or Above, Male 85% (77% 2017), Female 90% (77% 2017 ), Below or Well Below, Male 14% v Female 6%

### Maori

- Maori students – 21% Below (18 students) (32 % 2017)
  - Year 1 Maori Below (2) (Both male)
  - Year 3 Maori Below (3)
  - Year 5 Maori Below (4) 41%

### Whole school Targets/Actions for Reading in 2021

- Increase teacher capacity through additional Curriculum Support staffing to support and extend below and gifted learners
- Accelerating Year 1 and 2 'below' and 'well below' as outlined
- Increasing support across the school for literacy-reading oral lang focus (teacher aide resourcing)
- Change of pedagogy to match Play Based learning to increase oracy
- Focus on shifting achievement for students 'Below' to 'At'

### Plans

- Develop curriculum support staffing for both Junior and Senior support
- Employ reading recovery teacher

- Ensure funding for interventions at year 1-3 (stepsweb/ quick 60)
- Additional support for after 2 and 3 years cohorts 2020
- Continue to develop whole staff “in class” capacity to accelerate student progress with a focus on identified target students, via use of teacher inquiry and practice analysis
- Refine play based learning in year 1 - build to extend into year 2
- Teachers continue to ‘change practice’ to allow for greater student engagement in learning - knowing where their learning is and where it needs to go
- Change in teaching practice linked to improved teacher effectiveness – building learning-focused relationships; clarity of learning; assessment literacy; promoting further learning; active reflection; clarity about next learning steps, deliberate acts of teaching (Absolum, 2006)
- Differentiated reading/classroom programmes a part of general classroom literacy practice
- Across subject application of collaborative inquiry into effectiveness of practice and learning programmes involving careful monitoring of student achievement progress in focus reading groups
- Teachers in Years 1-4 will use ongoing analysis of observational data to inform teaching practice related to specific student learning needs in decoding and reading behaviour
- Teachers in Years 5-8 will provide planned opportunities for scaffolded support so that all students can access and use a variety of texts appropriate to their curriculum level
- Teachers continue to base key instructional reading through using the ‘guided reading’ approach
- Keep the teacher inquiry focus on individuals that need scaffolding and support ( target group)
- Continue to use Literacy Online and MoE resources to inform content and pedagogical knowledge related to literacy
- Trial e-asttle reading with year 7&8 students.
- Monitor school-wide reading teaching practices across the curriculum. (practice analysis) with a continued focus on knowledge teaching
- Increased literacy focus through CoL work with early childhood centres.

### Strategic Aim:

To raise student achievement in Mathematics and accelerate progress for students Below to meet curriculum expectation

### Annual Aim for 2020:

**Curriculum improvement - To have 80% of students operating At or Above the 'Expected Curriculum Level' in Mathematics**

### Baseline Data 2019:

At the end of 2019 Maths achievement data showed **82.0%** of all students were achieving *at or above* National Standards.

2019	%
Year 1	89%
Year 2	72%
Year 3	74%
Year 4	94%
Year 5	73%
Year 6	81%
Year 7	89%
Year 8	72%

### Targets 2020:

To maintain or raise the level of student achievement in Mathematics:

- By the end of 2020, 80% of all year groups will achieve *at or above* expected curriculum levels

## Actions:

- Senior math teacher identified.
- Math intervention team identified (N'Alim N'Alls
- All teachers will complete data analysis to have a clear understanding of the needs of their class
- All 'at risk' math students identified
- Assessment and analysis of math data Gloss, Numpa, basic facts
- Target students are identified and supported in 'In-class' focus groups
- Target students will be identified for intervention at year 2, 4, 7 /8
- Tier 2 students will enter intervention and or support programmes
- In class and withdrawal math support for all Well Below students
- In class target groups – Well Below / Below for all classes
- Alim intervention model implemented
- School to run our N'ALim (accelerating math) achievement initiative
- Teachers review numeracy lesson and pedagogy
- Lead teachers to explore problem solving approach

## Outcomes

End of year data from 2020 shows our target was met at **80.0%** of students 'At or Above' the expected curriculum levels. This represents a **2% loss** on our school target in 2019 and a **1.0 % increase** against the previous year. The below table illustrates cohort achievement by school year.

Maths				
Year	At or Above			Cohort % Change
	2018	2019	2020	+/-
1	90%	89%	83%	
2	80%	72%	83%	-6
3	86%	74%	76%	+4
4	62%	94%	74%	0
5	94%	73%	86%	-8
6	72%	81%	75%	+2
7	72%	90%	83%	+2
8	90%	83%	87%	-3

**Reasons for the Variance:**

- A disrupted year with covid related health, absenteeism, building and environmental factors
- Literacy focus year
- Low academic new enrollments i

**Maintaining performance**

- Continued school wide 'in class' target group focus
- Continued math intervention at key years
- Consistency of teacher delivery
- Interventions for Well Below students
- Differentiated numeracy teaching

**Evaluation and plans for End of 2020:**

**Areas of Strength**

- 31% (30% 2017) achieving Above NS for whole school
  - Year 2 – 38% Above
  - Year 7 – 45% Above
  - Year 8 – 37% Above
- Only 4 students Well Below standards (3%) (12 2017)

**Maori performance**

- Maori 73% At or Above (64% in 2018)
  - Maori 12% gain from Below / Well Below to 'At'
  - Maori Above: Year 5, 26%; Year 8, 52%
- Achievement pattern for school cohort shows we have no significant disparity for gender At and Above: Male 78%; Female 82% Pleasing result

**Gender**

- The gender pattern identified in 2019 holds. Differences apparent in early years disappear in later years:
  - Year 2 Boys (40%) Above Girls (12%) Above
  - Year 3 Boys (30%) Above Girls (18%) Above
  - Year 4 Boys (33%) Above Girls (26%) Above
  - Year 5 Boys (33%) and Girls (34%) Above
  - Year 6 Boys (37%) above Girls (41%) Above
  - Year 7 Boys (45%) above Girls (46%) Above
  - Year 8 Boys (36%) above Girls (39%) Above
- No gender disparity across Well Below to Below
- Achievement above national norms (old benchmarks)

## Areas for improvement

- All well below and below students
- 3 students 'Well Below' level expectation (6 2018)
- 27 students (19%) Below (46 Below in 2018)

### Maori

- Maori students 24% Below (36 % 2018)
- Maori: year 2 31% Below (1 student); Year 6 45% Below (3 students); and Year 6 35% Below (5 students)
- Strongest support required in following years:
  - Year 2 37%, 3 Below, 1 student Well Below.
  - Year 3 40% Below, 7 students
  - Year 6 31% Below, 13 students

## Plans

- Current Year 2 - 5 year groups of target students – lift progress and achievement to achieve expected by end of 2020
- Accelerated progress for groups of Target students in Year 3/4/6
- Review inclusive practice for Maori students - PLD (on going)
- Continue to maintain decrease in disparity between boys and girls- address issues student engagement (STEAM)
- Continue 3 tiered accelerated remedial math programme in term 3 with our N'Alim Model
- Establish 'Well Below/Below' student focus groups – all teachers
- Focus on Maths lesson structure
- Embed Mathematics 'basic facts' focus

## Whole school Targets/Actions for Maths in 2021

- Increase teacher capacity through Curriculum Support staffing to support and extend below and gifted learners
- Fund Mathematics - online support resource for community (fons 2021)
- ALim remedial maths at 3 strategic levels within the school Term 3
- PLD' teacher inquiry formative practice continue cross curricula pedagogy' – 'In Class' focus on below students
- Continued focus on changes in school-wide practice for accelerating remedial learners - linked from writing (formative practice)
- Focus on shifting achievement for students Below expected – to move to 'At' category
- 2021-focus home learning programme to reflect basic facts 'knowledge focus (Mathematics also)

## **Successes**

At Ngunguru School we are able to celebrate many successes in our children's learning. Many of our children achieve at a high level and of note is the progress in school wide Writing since 2012 and Mathematical achievement over the last 3 years. We continue to receive favourable feedback from the schools attended after leaving Ngunguru, where our students continue to perform academically to high standards and are often chosen as leaders in their next schools.

In particular we want to acknowledge the success of our independent in-school ALLs and Alim modelled interventions and their impact in accelerating achievement.

## **Summary Statement**

Ngunguru is currently exceeding the achievement of the 2017 MOE national standards and regional achievement norms in all subjects. Of particular note is the strength of our year 7&8 results against national downward trends and also our school's Maori achievement, which is generally above both national and regional norms. While this data is no longer available it serves as a historic benchmark. The Board of Trustees notes its on-going concern for new entrant cohorts in the areas of literacy (particularly oracy) and has signalled this as an on-going school improvement goal for 2021 and beyond. We note also our recent inclusion in the Whangarei kahui Ako - group 1 will see across COL collaborative strategic foci of Well-Being, STEAM and Literacy ( writing) through 2019 -2021.

In closing. Achievement data shows that there have not been significant losses to student academic performance throughout a difficult year. However, the Board is cognisant that the on-going impact of covid in academic, social and emotional realms of school life remains difficult to measure. These considerations will be at the forefront of deliberations as we head into 2021 and beyond.