



# **TE WHAI HIRINGA – PETERHEAD SCHOOL**

## **MATHEMATICS**

### **END OF YEAR REPORT 2022**



At Te Whai Hiringa we have had a goal of 70% of students achieving at or above the expectation for Number Strategy.

Last year we identified Number Knowledge as an essential ‘building block’ of all the other mathematic strands. When students have a secure knowledge of number - particularly the place value of numbers, they are able to use that knowledge to develop understandings and strategies in all other areas.

After a year of implementing Knowledge iCans and increasing teacher knowledge and capacity in this area, it was decided to focus on Number Strategy this year.

2021 End of the year data showed that we were at an underperforming percentage of 24% of all students meeting or beyond expectations in Number Strategy.

It was identified that teachers were still not clear on stages and what to enter into HERO for data assessment. One of the contributing factors to the low percentage at the end of 2021 could have been teachers entering achieved stage instead of working stage.

### **2022's ACTIONS**

#### **KNOWLEDGE**

Our Number Knowledge programme has continued this year. This has been designed so that the specific learning steps are transparent for both students, teachers and whānau.

The programme incorporates:

- individual students iCan sheets - where students can easily see what they have achieved and next steps. These have been transferred to the Goals section of HERO in preparation for students to begin to track, plan and share their own learning. A small group was chosen to trial this student driven learning.
- collation sheets for teachers to be able to track and easily form fluid groups for teaching particular learning goals. This has been transferred to HERO so that achieved Knowledge goals are enter here as well.

#### **STRATEGY**

Target Students were identified by classroom teachers. These were a group of students who were classified as ‘working towards’ expected end of year level and with explicit focussed teaching they were capable of achieving by the end of the year. Teachers identified what strategies (and the knowledge) that was needed by their students to reach expected levels.

**Assessment** - Mini Gloss has been developed using an amalgamation of previous strategy tests (GLOSS, Dinah Harvey’s version of Mini Gloss). These can be used as a formative assessment in a pretest and post test way. These were further developed to include more local curriculum contexts. At a staff meeting syndicates localised the mini gloss at their level by writing problems into word problems that their students could connect with.

#### **PLANNING**

New planning formats have been developed with the goal in mind being that the learning at each level, so this would include students’ next steps would be clearer for teachers.

A new Long Term Plan format was also introduced for trial to assist teachers to plan a balanced approach.

**2022 End Results compared to 2021 End of Year Results**  
**Number Strategy Expectations**

All Students					
Number Strategy Judgement	2021		2022		Change
	Well Beyond	(1) 0.3%	24%	(1) 0.9%	
Beyond	(20) 7%	(42) 8%			
Within	(49) 17%	(232) 44%			
Towards	(148) 52%	76%	(168) 32%	48%	Decrease of 28%
Working Towards	(69) 24%		(87) 16%		
TOTAL STUDENTS	287		530		

**All Students**

2021 - 24% all students working within or beyond/well beyond (only 287 total students data available (others must not have been entered by classroom teachers)).

2022 - 52% all students working within or beyond/well beyond from the expectation of 'Working towards.'

Māori Students					
Number Strategy Judgement	2021		2022		Change
	Well Beyond	(1) 0.5%	25%	(1) 0.2%	
Beyond	(14) 6.5%	(27) 7%			
Within	(38) 18%	(173) 45%			
Towards	(111) 52%	76%	(126) 33%	49%	Decrease of 27%
Working Towards	(51) 24%		(60) 16%		
TOTAL Māori Students	215		387		

**Māori Students**

2021 - 25% all students working within or beyond/well beyond  
 2022 - 52.2% all students working within or beyond/well beyond

Pasifika Students					
Number Strategy Judgement	2021		2022		Change
	Well Beyond	(0) 0%	18%	(0) 0%	
Beyond	(3) 6%	(8) 7%			
Within	(6) 12%	(46) 43%			
Towards	(29) 54%	82%	(33) 31%	50%	Decrease of 32%
Working Towards	(15) 28%		(21) 19%		
TOTAL Pasifika Students	53		108		

### Pasifika Students

2021 - 18% all students working within or beyond/well beyond  
 2022 - 50% all students working within or beyond/well beyond

### Summary of 2022 Results

Although we have not met our goal of 70% of students meeting or above expectations, there has been a significant increase in the amount of students who are now meeting or achieving expectations.

#### Possible reasons why we are still not achieving our 70% target

- COVID lockdowns, once again made for a fragmented beginning of the year.
- Teachers still being in the 'catch up' phase of building students knowledge and skills
- Teachers knowledge of the Number Framework and best pedagogy still lacking
- Our current pedagogy practice not meeting expectations of a culturally responsive programme.

Acknowledgement that only reporting on Number Strategy is not sufficient. Reporting on a wider range of Mathematics areas will commence next year culminating in an overall Curriculum Level which will take into account Knowledge, Strategy and Strand.

## **Te Whai Hiringa Actions in Mathematics 2023**

What actions are planned with the goal in mind to continue to improve Maths Levels across the school?

### **GENERAL**

#### **- DEVELOPING MATHEMATICAL INQUIRY COMMUNITIES**

Under the Pasifika Education Funding the school will be participating in the Developing Mathematical Inquiry Communities. This is a model of ambitious mathematics teaching founded in equity which incorporates an advanced form of complex instruction (originally designed and developed by Professors Elizabeth Cohen and Rachel Lotan at Stanford University, and in mathematics by Professor Jo Boaler). Complex instruction has been featured in four best evidence syntheses since 2003. This is a program that makes teachers more effective teachers of maths to Pasifika children. This culturally responsive pedagogy accelerates progress in mathematics education and supports student collaboration and wellbeing.

- Developing a Google Site with information and links for students and teachers to use that relates directly to the iCan goals. It will have links to pre/post tests, online sites that provide tutorials, practise, open questions - some will have a matrix attached to assist teachers and students to assess their own next steps
- Staff Meeting (at least 1/term) to address needs / highlight resources / collaborate to build resources and share ideas
- Access and develop the resource from Innes Kennard Around a Maths is Fun.
- Support from Kate Davies will be more focussed using data from HERO. Support teachers in class. Beginning Teachers and teachers whose classes are identified as having a great group of at risk students.

### **KNOWLEDGE**

Continue to build knowledge, confidence and achievement levels. Students continuing to drive their learning by using their iCan sheets - these are - building towards students using the HERO online data platform and being able to share goals and achievement with whānau.

### **STRATEGY**

Alter the current Mini Gloss Strategy assessments so that they are more inline with using word problems and contexts that Te Whai Hiringa students can connect with and part of developing our localised curriculum. The mini gloss will also have a cleared way for teachers to record results. This will help them to develop fluid target teaching groups.

Students will have an individual Strategy iCan (the same as the current Knowledge one) so that they, their whānau and teachers clearly know their next strategy steps.

### **OTHER STRANDS**

- Continue to develop Strand planners for teachers to use - have these available with teaching sequences, activities, links to videos etc. This will assist teachers to collaborate.
- Develop assessments that directly align with our Strand Goals on HERO to allow for more student agency. What could I do at the start of the unit? What have I learnt and proven at the end of the unit.

### **DISPOSITIONS**

Highlight these (already on the KAWA) and ensure that they are prevalent in every classroom.

They need to become part of the everyday maths language in the classroom.

Add to HERO so that students (particularly Taiohi students) can upload and share proof of this developing.

