

# 2011 Report to the Board of Trustees: Student Achievement in Mathematics

## Background

- In 2008-2009 Russley School participated in the Numeracy Professional Development (NDP) programme.
- Since 2010 the NDP continued to be a minor PD focus and the two Numeracy Lead teachers have provided support and guidance to build staff capability.
- In 2008 the school set targets using 2007 student achievement data. By the end of 2008 it was evident that there were issues around the validity of the 2007 data. After closer investigation it was found teachers lacked confidence about teaching the NDP programme and using assessment strategies. In spite of this staff confirmed their desire to continue to set and work towards the agreed high expectations and challenging targets. These were retained but the annual incremental steps were reviewed to more realistically reflect the actual achievement situation.
- Now syndicates are confidently using achievement information in their regular meetings to identify student learning needs, select and implement appropriate strategies, target resources and monitor ongoing student progress in mathematics. Syndicates document issues, actions and results and this achievement progress information is reported and monitored at leadership level.
- In 2010 the school's Mathematics and Statistic Curriculum guidelines were completed as part of the Russley Curriculum. The guidelines identify the essential elements of classroom programmes as well as the assessment tools and processes teachers are to use to gather information on student achievement in relation to the NZC and National Standards.
- In 2010 moderation systems were set up within syndicates to ensure consistency in teacher assessment against the National Standards.
- This report to the Board of Trustees outlines: results of the Progress and Achievement Tests (PAT) March 2011; makes comparisons to data from previous years; identifies key trends and issues; and describes the strategies the school has planned to address the identified issues.

## School Targets

- Reduce the percentage of students in Years 4-8 working at or below stanine 3 in maths from 15.4% in 2010 to 14% in 2011.
- Increase the percentage of students in Years 4-8 at or above stanine 8 in maths from 15.4% to 17% in 2011.
- All students in Years 1-3 will be working at the National Standard.

The aim is to meet the targets in incremental steps as follows

Mathematics					
Year	National Norm	2008	2009	2010	2011
Percentage of Years 4-8 students at or below stanine 3	23	15	14 <i>Actual</i> <b>16%</b>	13 <i>Actual</i> <b>15.4%</b>	14 <i>Actual</i> <b>12.4%</b>
Percentage of Years 4-8 students at or above stanine 8	11	16	19 <i>Actual</i> <b>10.5%</b>	12 <small>(target adjusted based on 2009 results)</small> <i>Actual</i> <b>15.4%</b>	17 <i>Actual</i> <b>17.6%</b>
Years 1-3		No data	Gather baseline data	Still to analyse in order to set targets.	All students at the appropriate Standard

## Trends or Patterns

National norm and school targets compared to cohort figures for 2011							
	National Norm	2010 School Targets	Year 4	Year 5	Year 6	Year 7	Year 8
At and below stanine 3	23%	13%	13.3%	20.3%	7.1%	16.6%	4.7%
At and above stanine 8	11%	12%	20%	27.7%	7.1%	16.6%	16.7%
At and above stanine 5	60%	N/A	67%	66.6%	79%	78%	81%

Comparative data for year cohorts achieving at or above stanine 5 based on historical reporting					
	2007	2008	2009	2010	2011
Year 4	No data	67%	53.6%	69%	67%
Year 5	72%	65%	77.1%	60%	66.6%
Year 6	85%	75%	66.7%	77.6%	79%
Year 7	66.5%	78.5%	77.8%	77.4%	78%
Year 8	57.5%	73%	76.2%	76.5%	81%

### General Trends

- There is clear evidence Russley School is adding value to student achievement in mathematics from Year 1 to Year 8.
- Students are exceeding the PAT national norms and have made progress in all areas of achievement from 2010.
- The school has exceeded targets for Years 4-8 i.e. reducing the number of students achieving at or below stanine 3 and increasing the number of students achieving at or above stanine 8.

### Year Group Trends

- While Year 5 has the highest percentage of students working at or below stanine 3 (20.3%), a significant number of these students are achieving at stanine 3. This same cohort also has the highest percentage of students working at or above stanine 8 which means that Year 5 student achievement is polarised at each end of the spectrum. This is the only cohort that did not make progress gains at or above stanine 5 from the previous year. According to previous reports this is not an historic trend for the students moving from Year 4 to Year 5 and is more likely to reflect this specific cohort.
- Pleasing progress has been made by Year 6 students this year. In 2009 as the Year 4 and in 2010 as the Year 5 cohort, the group was identified as achieving significantly lower than equivalent Year 4 and 5 cohorts in previous

years. In addition the 2011 Year 6 cohort only 7.1% at or below stanine 3 compared to 15% of the Year 6 cohort in 2010. The cohort has also made significant achievement gains over time e.g. 25.4% increase in students achieving at or above stanine 5 from the 2009 results.

- This is the first year since 2007 that students moving from Year 7 into Year 8 have shown achievement gains. This cohort has the lowest percentage of student working at or below stanine 3. This is a pleasing result and a reversal of the pattern in previous years.
- The Year 8 cohort has 17% more students achieving at or above stanine 8 than the Year 8 cohort in 2010. This is a pleasing result in itself but even more remarkable given this same cohort as Year 6 in 2009, were achieving significantly lower than Year 6 cohorts in previous years.

### **Gender Trends**

- All gender cohorts with the exception of Year 4 boys and Year 8 girls, made progress from 2010 to 2011.
- In 2010 the gender trend indicated girls were on average, achieving lower than boys. Although there is some variation between year groups, in 2011 girls and boys are achieving at similar levels.

### **Maori**

- It is pleasing to see only a very small variation (.7%) between Maori achievement and the general school achievement pattern. 74.3% of Maori students are achieving at or above stanine 5 compared to 75% for the general cohort. The data must be considered with caution however as it can be easily distorted as a result of the small numbers in the cohort.

### **Year 1 - 3 Cohorts**

The timing of our end of year assessment against the National Standards means the data reflects overall teacher judgements against the National Standards at a time when students may not have completed the required 40, 80 and 120 weeks at school. The data was collected as part of the teacher training with regards the National Standards and while it gives the Board some baseline data it is neither valid nor reliable. The pattern of achievement of the Year 3 students was incomplete due to the timing of the implementation of the National Standards.

## **Strengths**

Cohorts achieving particularly well or above expectations include:

- The numbers of the Year 5 students at or above stanine 8. This indicates that the year 4 classroom programme is primarily meeting the needs of high achieving students rather than the general Year 4 cohort, due to the high numbers of students at or below stanine 3 and the lack of progress of students achieving at or above stanine 5.
- The numbers of Year 6 and 8 students at or below stanine 3. The learning support and classroom programmes in Year 5 and Year 7 appear to be meeting the needs of low achieving students.
- The Year 6, 7 and 8 students which are achieving significantly higher than the national norm at and above stanine 5.

## Areas for Development

Further investigation needs to determine effective adaptations to meet the needs of groups of greatest concern:

- The general decline in achievement from Year 4 students moving into Year 5.
- The Year 4 students achieving at or below stanine 3.
- Increasing the number of Year 6 students achieving at or above stanine 8.

Specific analysis of achievement information and student progress will occur at a classroom and syndicate level for these cohorts. Strategies will be identified, implemented and reviewed to judge their success. Results will be monitored at leadership level.

## Future Direction

Priority actions for future development are to:

- Investigation to determine appropriate interventions for individuals within the cohort groups identified as greatest concern.
- Monitoring the achievement and progress of these individuals to evaluate the success of interventions in meeting their learning needs.
- Continue to develop MUSAC to collate information on student achievement and progress in relation to the NZC and National Standards.
- Implement the Junior Maths Assessment tool (when the Ministry of Education makes it available) to analyse student achievement information against the NZC and National Standards for Year 1-3 at 40, 80 and 120 weeks.
- Continue to moderate within and across Syndicates when assessing student achievement information.
- Set targets for 2012 to reflect the National Standards and our students' needs.
- Provide professional development in Statistics, Geometry and Measurement in line with the NZC and National Standards.