

2016 Mathematics Evaluation Report

Last year the Dem engaged in a major evaluation of Mathematics across the school. All students and teaching staff completed detailed online surveys, parents completed a survey online and the data from this survey informed the discussions of two parent focus groups.

The results of the surveys and the focus groups were very positive and provided helpful feedback. Across the data, there are strong indications that we have made positive progress across most areas of Mathematics teaching, learning, assessment and reporting.

The student evaluation highlighted that we were performing extremely well in the following areas:

K-2 student survey (354 responses):

- 90% of students indicated they felt confident in maths
- 83% of students responded they had a positive enjoyment of maths
- 90% of students think maths is as important as all other subjects or the most important subject
- 80% of students feel the maths they learn at school is linked to the real world
- 85% of students indicated that their teacher regularly tells them the maths skills they are learning and why
- 86% of students report that their teacher regularly tells them what they will be learning at the beginning of the lesson
- 82% of students felt that the lessons were 'pitched' at the right level for them (revealing high levels of effective differentiation in class).
- 90% of students feel that they can sometimes or always explain what they are good at in maths
- 85% of students enjoy maths homework, with a slightly higher proportion indicating they enjoyed Mathematics

3-6 student survey (362 responses):

- 92% of students indicated they felt confident in maths
- 90% of students responded they had a positive enjoyment of maths
- 89% of students responded that their teacher helped them to understand the connections between different areas of maths (different response from K-2)
- 77% of students responded that their teacher helps them understand the connections between maths and other subjects
- 97% of students think maths is as important as all other subjects or the most important subject
- 93% of students feel they are able to connect what they learn in maths to the real world
- 87% of students are able to explain what they need to do to get better at maths
- 91% of students feel their teacher tells them reason they are learning particular maths skills and why they are important
- 96% of students say their teacher regularly tells them what they will be learning at the beginning of the lesson
- 87% of students felt that the lessons were 'pitched' at the right level for them (revealing high levels of effective differentiation in class).
- 72% of students gave positive responses about enjoying homework, with 70% responding positively about Mathematics

Areas for improvement identified in both student surveys included:

- More time needs to be spent on reflection at the end of lessons to support students to identify, explain and reflect on what they have learned.
- Students should be regularly shown examples of work that enable them to clearly explain what they need to do to get to the 'next level'. One such strategy is a 'bump it up' wall which shows the levels of the numeracy continuum along with clear 'I can' statements (which tell students the skills they need to demonstrate at each level) accompanied by examples of student work to illustrate the level.

- High levels of students find Mathletics easy. Whilst this is positive (as the purpose of homework is for practice and reinforcement of learning, not new or challenging learning) we understand that there is a fine balance between work being of an engaging and acceptable level and so easy that it becomes disengaging.
- Many students in years 3-6 wanted maths homework to be more fun and engaging.

The teacher evaluation survey (28 responses) had a more qualitative focus than the student survey, and consisted of a series of ‘tell us how you...’ questions that captured teaching practice across the school. This data highlighted that we were performing extremely well in the following areas:

- 100% of staff collaboratively program maths with 96% responding that they felt it was a positive and effective method of planning for mathematics instruction
- 92% of grade teams regularly share best practice in mathematics teaching and assessment with each other
- 100% of grade teams use formative and summative assessment methods to inform their instruction of maths
- 96% of teachers felt confident in programming maths
- The structure of maths lessons across the school is extremely similar and tends to consist of a number warm up, explicit whole class teaching of content, differentiated hands-on activities, whole class back together to consolidate knowledge
- Many grade teams have embraced the conceptual aspect of scope and sequence and are programming integrated, real-world problems in maths designed to engage, support and challenge students
- 96% of staff report they are able to access to the resources they need to teach number in their classroom and 94% of staff feel they have access to adequate resources to teach measurement, space and geometry

Areas for improvement identified in the teacher survey included:

- Further work could be done to better align the difference in programming methods and approaches across the school
- Teachers are confident and effective users of summative assessment methods (e.g. written and oral assessments after learning has taken place) but need further support with using formative assessment methods to inform grouping, teaching and differentiation (this is the type of daily, at point of instruction assessment that enables teachers to see what students understand about the topic being taught that lesson)
- Teachers require more support at using DEC the assessment tracking tool PLAN to track and monitor student progress
- Teachers feel we need to improve how we report maths achievement to parents
- Mathletics is used differently across the school and some alignment and differentiation is required to use the platform more effectively

The parent evaluation survey (35 responses) highlighted that we were performing extremely well in the following areas:

- 91% of parents feel their child is confident in maths and enjoys maths lessons at school
- 75% of parents feel that parent teacher interviews help them to understand their child’s achievement and progression in maths
- 62% of parents feel that Semester 1 & 2 Reports help them to understand their child’s achievement and progression in maths
- 85% of parents feel their child enjoys Mathletics homework and that they can complete it without parental support

Areas for improvement identified in the parent survey included:

- 63% of parents do not understand how maths is taught at the Dem
- 56% of parents feel that grade information evenings and parent teacher interviews do not help them to understand how maths is taught at the Dem
- 48% of parents supplement their child’s learning in maths by providing them with additional activities/textbooks or tutoring

The parent focus groups were a qualitative discussion that picked up on some of the areas for improvement highlighted in the parent survey. The questions the groups discussed were:

1. *Can you explain how you think Maths is taught at the Dem?*
 - a. *What could we do to improve your understanding of mathematics teaching?*
2. *Describe how teachers at the Dem have communicated children's achievement in Maths, and what they need to do to improve?*
 - a. *How could we improve our communication surrounding children's achievement and progression in Mathematics?*

The discussions were very positive and productive and we thank the parents who gave up their time to give us such helpful and supportive feedback.

The results of the focus groups revealed that:

- Parents felt that we needed clearer communication about what we teach in Maths, including explanation around the ways in which modern approaches differ to the way parents were taught at school.
- There is a level of variation across the school in terms of the ways in which different grades approach the teaching and differentiation in mathematics, including 'streaming' in number. The focus groups indicated they would like clarification around this and some explanations as to how and why the approaches differ.
- Parents requested further clarification around what is the 'expected' level their children should achieve, as they felt the reports do not make this very explicit in terms of mathematical skills. This includes the NSW DEC's A-E grading system, and what a 'sound' means for their child at that time.
- Parents would like to see their children's assessments to understand what they can and can't do.

Recommendations:

As a result of the results of the evaluation, the Dem is planning to:

- Engage in further teacher professional learning on conceptually programming, teaching and differentiating the maths scope and sequence, including using formative assessment at point of instruction to inform differentiated approaches and using PLAN to track student progress
- Encourage teachers to plan more time for student self-assessment and reflection at the end of maths lessons
- Trial 'bump it up' walls in one aspect of numeracy to better inform students and parents about how to reach the next level in maths
- Engage in professional development around using the Mathletics platform effectively to cater for student homework and differing abilities, and better align activities to the school's maths scope and sequence
- More information about maths will be included in the termly Grade Newsletters
- Parent information evenings on maths will be held for years K-2 and 3-6 to outline the syllabus, teaching methods and give suggestions as to what parents can do at home (dates TBC)
- Teachers will discuss ways in which to make summative assessment results available to parents
- The Dem will explore the NSW DEC's assessment and reporting policy to see if any changes can be made to the reporting format

We thank everyone for their participation, encouragement and feedback around this important school program!