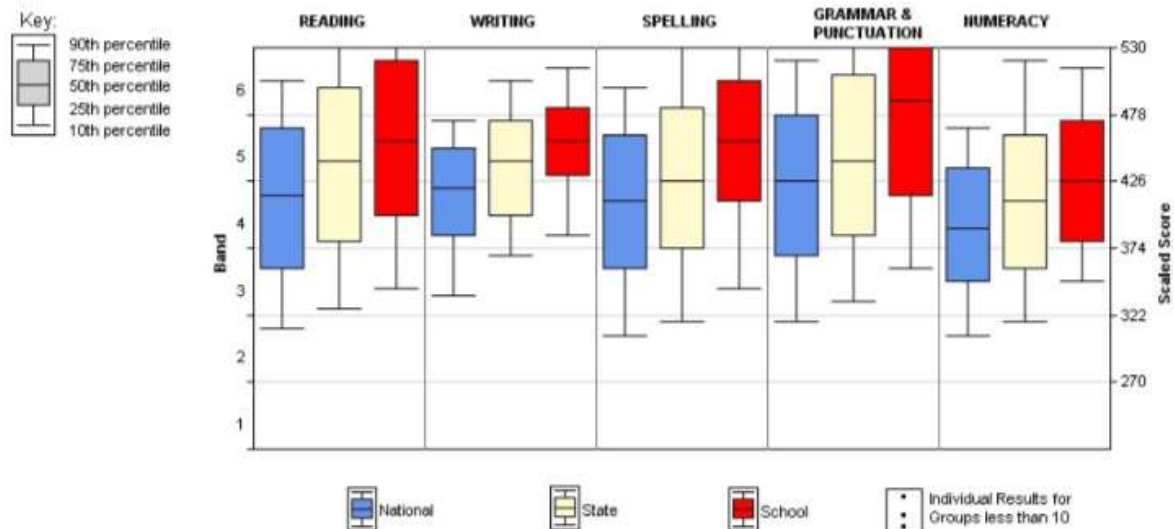


## Number Intervention at Galilee

Jane Ferris

As we approached our 2017 Review last year, the new leadership team, with the staff at Galilee Regional Catholic Primary School, investigated the school's data and discovered a pressing need in the school for some kind of Maths intervention. Our 2016 NAPLAN data and school-based assessment revealed Numeracy as an area of school development. As shown in the table below, our scores for Numeracy, despite being higher than state and national scores, were still our lowest across the curriculum.

### NAPLAN 2016 Year 3 Galilee School Summary Report



One of our targets from the previous Review had been to reduce the percentage of students in the bottom three bands in Number to 15 percent or lower in Years 3 and 5. By 2016, there had been no reduction of the proportion of students in the bottom three bands. In fact, the proportion of Year 3 students achieving at this lower level had increased to 25%.

After consideration of our options, we decided that Catholic Education Melbourne's Number Intervention F-4 programme would be an appropriate and useful response to this area of need in the school. I was lucky enough to be selected for the position of Number Intervention specialist for 2017 and began my training in February of this year. The training has comprised fifteen days in 2017, with an additional six days to come in 2018. The training days have provided me with valuable insight into the ways in which children learn about Number and has taught me an exciting and effective approach to assessing and targeting learning at each child's 'cutting edge' or zone of proximal development.

#### **Specialist intervention:**

As the Number Intervention specialist, I used the F-4 Learning Framework in Number to profile students' number knowledge and target children's specific learning needs. Being in training this year, I had specific guidelines to follow, involving two teaching cycles within the year, each lasting 12 to 15 weeks. In the first semester, eight students from Years Three and

Four were taught, and during the second semester, six students from Years One and Two. Students were taught individually, in pairs or in trios. My role was to:

- identify at-risk students through research-based assessment schedules that indicate the student's level of number development;
- apply necessary intervention strategies in a detailed sequential instructional system to improve student performance in various aspects of number knowledge;
- and build student confidence, helping students attain success in Mathematics.

As a result of this intensive intervention, each child demonstrated impressive growth in understanding in various aspects of Number within the semester. The growth was reflected in classroom learning and throughout other areas of Mathematics. The increased confidence of each child in the programme led to success in the classroom in other areas of learning. Specifically, the average growth in the fourteen children who participated in the intensive specialist intervention programme was a minimum of nineteen months across five domains of the programme: Numeral Identification, Forward and Backward Number Word Sequences, Structuring Numbers (1-20) and Conceptual Place Value. After approximately forty 30-minute sessions of targeted intervention, 93 percent of the students progressed from *below standard* to confidently achieving *at standard* in Number. (The 7% who did not achieve standard have since been identified with specific learning difficulties.)

Classroom teachers reported improved outcomes as a result of the specialist intervention; one stated:

“...As a classroom teacher, I see first-hand, how these Number Intervention sessions benefit the students. Working closely with Jane, the students in the Number Intervention programme have gone from strength to strength, moving from below standard to confidently at standard in a short period of time...”

(Carmen – Classroom Teacher)



Parents of children in the specialist programme had this to say:

“...My daughter Madeline (Year 1) has benefited in an extremely positive way from being in the Number Intervention programme. It has helped with her confidence with Maths and numbers, and this has translated also to other areas of learning. She thrives in a one-on-one teaching environment, and as soon as she started the

programme we saw huge improvements and the quality of her work has increased immensely along the way!”

(Maureen – Parent of Year 1 participant)

“...The programme has been really positive for Isabella (Year 2). It has helped her improve enormously this year in her Maths skills. It also has provided an environment of enthusiasm for learning, and we can see how Isabella is enjoying your class so much that she is doing homework on her own and is excited to share with us. It is interesting to see how she is putting in practice some of the strategies that she has learned from the program. She has also gained more confidence and is proud of what she has achieved....”

(Sandra & George – Parents of Year 2 Participant)

“...Kristian and I are more than pleased not only to read about Kiera's results but to witness her new-found confidence. She now actually enjoys doing her Maths homework and has applied the skills you've taught her to everyday tasks such as counting her pocket money and working out quickly how much more she needs to earn/save to buy herself a special item she's always wanted...”

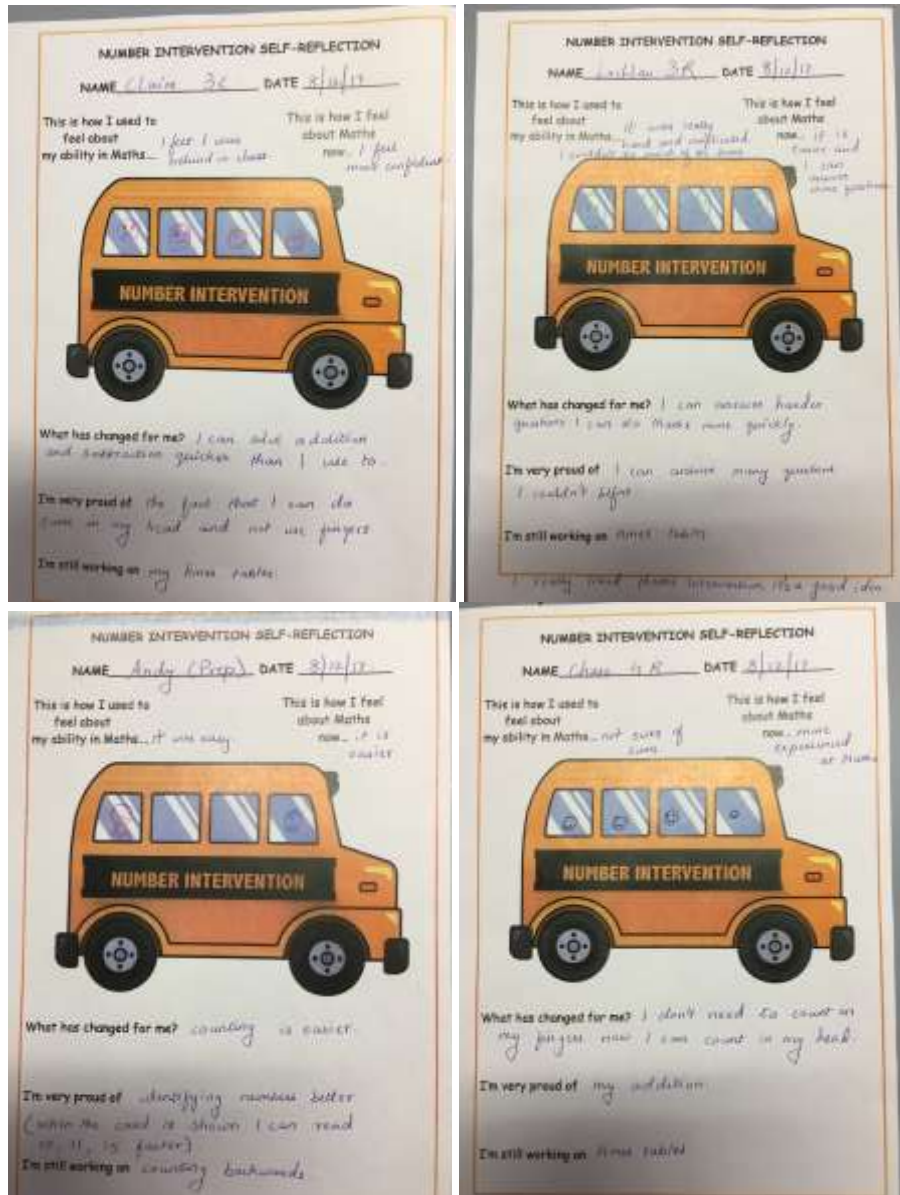
(Christine and Kristian – Parents of Year 3 participant)

### **Working in collaboration:**

Collaborating with teachers to implement various strategies for working in Number in classrooms has proven very effective. In situations where there was strong collaboration between the classroom teacher, the parents of the child and me, the Number Intervention specialist, have proven the most effective in terms of student growth. A collaborative effort and consistent follow-up by the classroom teacher after the intervention programme has seen a number of children achieving at a very good standard in Mathematics at the end of the year on SINE, PAT Maths and classroom assessments.

The Number Intervention programme has been implemented in a variety of ways at Galilee, and each of these elements has proven effective in producing improved outcomes in the children involved in the programme. Our school Learning Support Officers, as well as a number of interested parents, have participated enthusiastically in training sessions, whereat I introduced a structured, step-by-step programme, based on the Learning Framework in Number, for students in need. Ongoing training and support has been aimed at how to most effectively work one-on-one with students, how to use various materials and resources, how to move children along the learning trajectory and, for the LSOs, how to assess the various domains.

Students, teachers, Learning Support Officers and parents have all responded very positively to the programme. I have included snapshots of feedback from stakeholders of the programme throughout. Every child involved in any way in the programme reported increased self-confidence in Maths, improved understanding of Number and increased willingness to 'have a go'. Each child completed a self-reflection, a sample of which I have included below.



Each of the children who entered the programme at any point during the year were achieving below standard in Number. Some excellent results were achieved by the students working with Learning Support Officers in a less intensive mode (approximately three 30-minute sessions per week for the first semester, decreasing to one 30-minute session in the second semester), with 64 percent of students achieving standard at the end of the year. (Six of the fifteen children working with LSOs have been identified with specific learning difficulties.) A number of children have attained an improvement of up to two years' growth over the year of working with Learning Support Officers on a regular basis. I commend the efforts of our LSOs – Maree, Sophia, Pauline, Rosa and Tegan – for their professionalism in learning about the programme and their work with students in developing their skills in Number.



A group of parents trained in the programme also had success with Year Prep students, helping each of the six children selected to attain standard at Foundation level with two to three individual sessions weekly for fourth term. I thank them for their willingness to learn and help our students.

One classroom teacher's response to the programme was:

"...The students were enthusiastic to attend. Their confidence rose as well as their mathematical skills. I was given useful resources and I felt supported as a teacher with this program to effectively cater for the individual needs of the students who need extra assistance and intervention....The LSOs were extremely well trained and equipped and the resources can be used for all class members. The time of the LSOs has been fully utilised so that when they come into a classroom, their valuable time is productive....The parent feedback I received was extremely positive, as they could use the resources at home with the children, saw improvements with their children and felt supported to assist the school in the Maths education of their children...."

(Helen – Classroom Teacher)

### **Empowering others:**

The Number Intervention training has empowered our LSOs and participating parents with skills and knowledge which they have successfully utilised to bring about change in children's understanding, skill and levels of confidence in Maths.

"The Number Intervention program has had a positive impact on every student. Since Maths is cumulative, clear understanding of basics effectively helps develop other concepts. Through various structured activities in the program, students have built their self-confidence and appreciation of the subject. Now basic number concepts come automatically and intuitively to students which required a lot of effort prior to the program. Seeing the students achieve standard grade levels after the program and be more confident has provided me much satisfaction."

(Sophia – Learning Support Officer)

"As an LSO, I found the Number Intervention programme very successful, well-structured and enjoyable to implement. As there were five LSOs able to take part, children that needed individual help could get it while other children were in groups of 2 or 3 depending on their ability. Jane made sure this changed as children

improved to maximise the benefit. The range of materials and information helped to identify strengths and weaknesses in the children's numeracy skills enabling you to focus on the areas most needed. After two terms there was obvious improvement in the numeracy skill and speed of all the children and it was lovely to see their confidence grow with improving ability. I very much enjoyed being part of the programme and am grateful to Jane for all her work on it and for her support of the LSOs during the implementation of it.”

(Maree – Learning Support Officer)

The parent helpers also reported satisfaction and enjoyment from being a part of the programme.



“By the end of the term I was amazed at the level of understanding and skill they displayed. Clearly this programme worked because the kids were being rotated weekly with different helpers and the results were quite rapid in my opinion. I learnt that kids just need time to understand, that the answers are there but when placed in a one-one situation they are capable of giving the answers in their own timing because they are more comfortable as well. It also helped me to be able to teach my younger kid at home number concepts and how to teach him these concepts to make it fun like a game. That's something really crucial about the whole programme: ... the children participate actively because they're excited about the approach and feel like they are winning a fun game!”

(Tiffany – Prep parent-helper)

“Over the past few weeks, through the Number Intervention programme, I have noticed benefits for particular children, because of the one-on-one experiences focusing on their individual stage of conceptual development. The children have enjoyed the counting and patterning activities and have become increasingly competent in their understandings. The programme has been a wonderful and rewarding volunteering opportunity for me and I hope to be able to be involved as a volunteer again next year.”

(Rae – Prep Grandparent-helper)

“I have enjoyed the entire experience of Number Intervention with the Preps.

Going through the learning process myself and then applying the exercises with the children has been both rewarding and enjoyable. It is a pleasure to see the children improve in such a short time.”

(Anastasia – Prep Parent-helper)



#### **Future directions:**

We are very enthusiastic about our future direction, with recent staff professional learning being dedicated to the introduction of a classroom approach to Number through the skills, strategies and understandings inherent in the Learning Framework in Number. At this stage, staff have been introduced to an assessment schedule which will help us to identify and target individual learning needs for every child in the school. Working in collaboration, staff in 2018 will develop a whole-school pedagogy for teaching Number which will have at its core student-centred, targeted, personalised learning, beginning with an interview assessment of every child.

To ensure that the implementation of the Learning Framework in Number as a classroom pedagogy is achieved in an effective and timely manner, we have invited two other schools to join us in a ‘collective’. Our aim is to collaborate on best practice and to share resources to achieve our common goal. We have applied for funding which will provide us with some of the necessary resources. Each of our principals and leadership teams are committed to this initiative, providing support where necessary.

Overall, the implementation of the F-4 Number Intervention programme at Galilee has been a very successful initiative, improved outcomes of children in Number being but one of many goals achieved. Benefits to Learning Support Officers through upskilling and direction include a sense of purposefulness, increased confidence and motivation, and a buy-in to a whole-school approach to improving outcomes of all students. Involving LSOs in the data collection and analysis process has provided for them a deep sense of achievement and pride.

The empowerment of parents through information and training sessions, and through consistent communication and collaboration, has contributed to a positive culture wherein

parents directly involved in the programme along with others who are not, have expressed enthusiasm and delight in the success of the children involved.

The goals of the programme - to identify at-risk students through research-based assessment; to apply necessary intervention strategies; to build student confidence; and to help students attain success in mathematics - have all been achieved with thirty-five of our students. We look forward to an even more successful year in 2018, as we embrace the Learning Framework in Number as a whole school and personalise every child's learning of this vital aspect of their education to ensure each child is achieving in Mathematics at his/her optimum level.

**In summary, our school principal had this to say:**

“The implementation of Number Intervention has resulted in accelerated and sustained student progress and confidence in Number. It has increased the professional learning of teachers, LSOs and parents. Jane has led the programme with a strong sense of communication, collaboration and empowerment, with the participating students always the focus. Jane has received professional training and support from CEM staff, particularly Vicki Nally, Learning Consultant in Maths and Number Intervention. The programme is designed to improve student learning in Number, but thanks to Jane and her approach, it has also made a significant impact upon the culture and community of Galilee....in only one year. Congratulations to our students on their progress and I look forward to further development in 2018.”  
(Simon Millar – Principal)

As Number Intervention specialist at Galilee, I have had the opportunity to work with a range of wonderful people, each dedicated to the support and improvement of our children. Training with CEM's Southern Region Maths consultants, Vicky Nally and Lucy Kett, and the knowledgeable and generous Dr Bob Wright, has been enjoyable, enlightening and empowering, and I thank each of these experienced and learned mentors for their generosity and support. The cohort of excellent teachers with whom I train have also been a wonderful source of support and information, sharing their insights and experience for the benefit of us all.

At school, the support of classroom teachers, LSOs and parents has been overwhelming, and has ensured the success of the programme. I thank each of them for their focus on the improvement of each child in our care. Their willingness to learn, share and collaborate has added strength to this important and necessary initiative and led to outstanding improvement across a number of grades, directly impacting at least 35 individual children. I look forward to working again with each of these wonderful people in continuing and expanding our Number Intervention programme and implementing the Learning Framework in Number across the school in 2018.

**Jane Ferris**  
Number Intervention Specialist