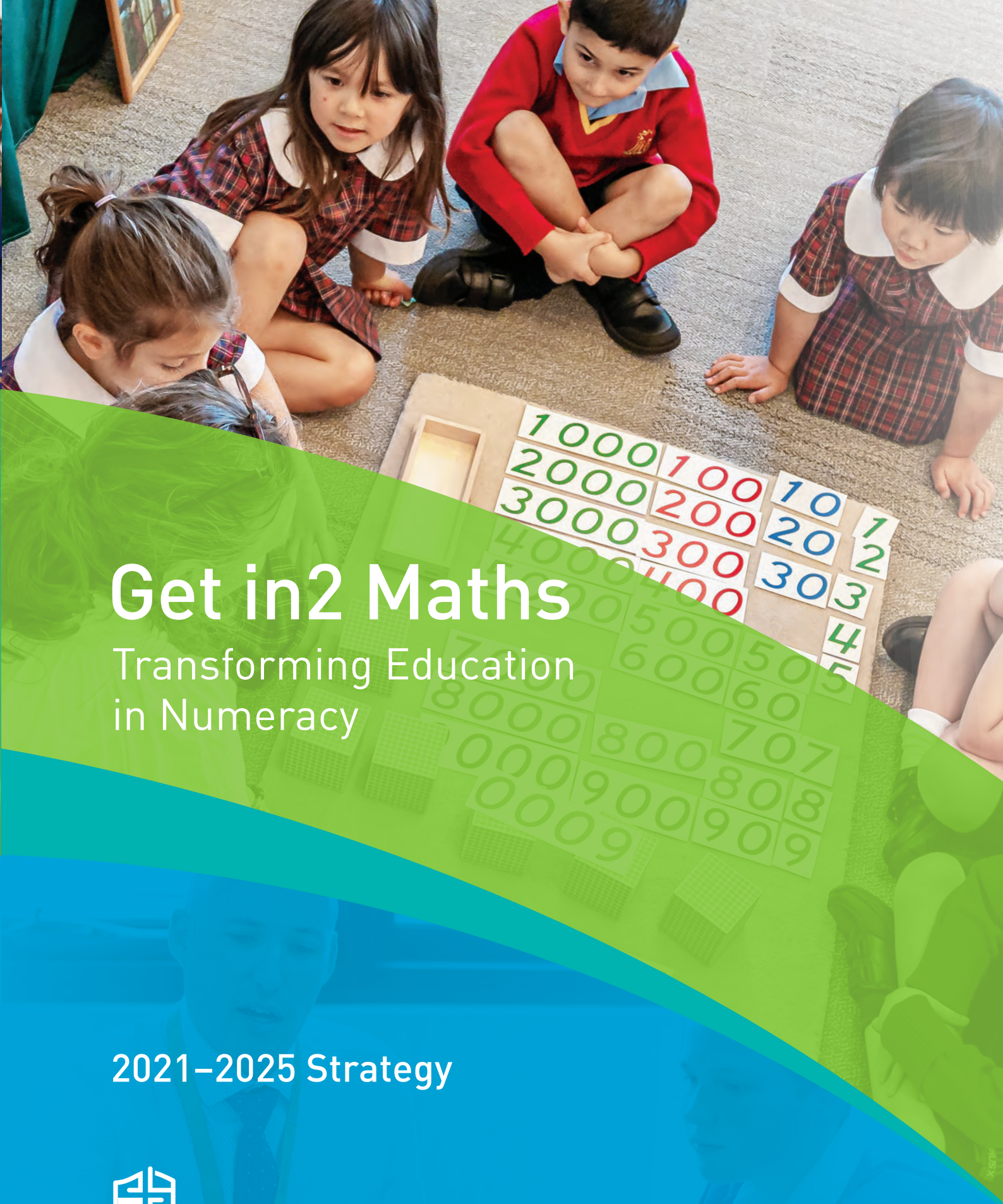

Get in2 Maths

Transforming Education in Numeracy

2021–2025 Strategy

MELBOURNE
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‘Learning brings hope … At the very heart of each Catholic school is a desire for the full flourishing of each student …’ [1.]

The intent of this document is to articulate measurable and achievable actions that schools can take to improve the experience of learning mathematics for all students.

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1. Catholic Education Melbourne (CEM) 2016, *Horizons of Hope: Vision and Context*, CEM, East Melbourne, accessed 9 December 2020 https://www.macs.vic.edu.au/CatholicEducationMelbourne/media/Documentation/HoH Documents/HoH-vision-context.pdf.

Foreword

It is with pleasure that I introduce *Get in2 Maths – Transforming Education in Numeracy*, the 2021–2025 mathematics strategy.

This strategy guides the direction of mathematics education in Catholic schools and is underpinned by the belief that all learners can achieve success in numeracy. It is linked to the beliefs that are articulated in the *Horizons of Hope* education framework, acknowledging the importance of the full flourishing of every student.

Get in2 Maths is visionary with aspirational goals outlining measurable and achievable actions that schools can take to improve the learning and teaching of mathematics for all students. The development of professional learning opportunities for teachers, with an emphasis on strong content knowledge and sophisticated pedagogical practices and assessment strategies, is a major part of the implementation plan for this strategy.

As mathematics has a fundamental role in empowering young people to make informed choices and become critical citizens, this renewed focus on the power of pedagogical choices and deep learning is welcomed.

The mathematics team believes that working in partnership with schools, combined with the achievement of the aspirational goals, will create the conditions to have a significant and far-reaching impact on learning outcomes in mathematics.

I commend this strategy to you and trust that it will be an invaluable guide in your efforts to provide powerful learning opportunities for all students.

Jim Miles
Executive Director

Rationale

The Melbourne Archdiocese Catholic Schools (MACS) *Horizons of Hope* education framework acknowledges the importance of quality teaching to maximise the achievement of all students in mathematics.

Underpinned by the belief that all learners can achieve success in numeracy, teachers and leaders need to have a comprehensive knowledge and understanding of student learning in mathematics. To become numerate citizens, young people need a strong foundation in mathematics with opportunities to transfer their knowledge to other learning areas and the wider world.

'Numeracy encompasses the knowledge, skills, behaviours and dispositions that students need to use mathematics in a wide range of situations. It involves students recognising and understanding the role of mathematics in the world and having the dispositions and capacities to use mathematical knowledge and skills purposefully.' [2.]

Within the context of the Victorian Curriculum, educators need to have deep mathematical content knowledge, and an understanding of how students learn and the impact of robust pedagogical choices to ensure that learning is effective for every student.

According to Peter Sullivan, 'Mathematics teaching should foster creative and critical thinking, and pedagogies should ensure that all students are exposed to a full curriculum for as much of their schooling as possible.'

Teachers and leaders should have the ability to identify and respond to individual learning needs, using a repertoire of research-informed and purposeful teaching strategies that inspire and support growth and progress for all. Partnering together for improved growth and progress enables the whole system to build a culture of learning together.

Through pedagogical choices, educators seek to develop deep learning, powerful teaching and '... create animated learners, inspired by the Gospel and led by the Holy Spirit to act for justice and strive for the common good.' [3.]

2. Australian Curriculum, Assessment and Reporting Authority (ACARA), 'Numeracy', Australia Curriculum, ACARA, accessed 9 December 2020 https://www.australiancurriculum.edu.au/f-10-curriculum/general-capabilities/numeracy/.

3. Catholic Education Melbourne (CEM) 2016, *Horizons of Hope Foundation Statement: Pedagogy in a Catholic School*, CEM, East Melbourne, accessed 9 December 2020 https://www.macs.vic.edu.au/CatholicEducationMelbourne/media/Documentation/HoH Documents/HoH-Pedagogy.pdf.

Vision

The *Get in2 Maths* strategy consists of six aspirational goals. The mathematics team will work in partnership with schools to achieve these goals by the end of 2025.

1.	**Every school has an appointed mathematics leader with adequate release to enact the school's mathematics action plan.** The mathematics leader will support teachers in various ways such as analysing data in context, leading facilitated planning sessions, developing priorities for improvement and guiding the professional learning of teachers.
2.	**Every school has a mathematics leadership team to drive the learning and teaching of mathematics at a classroom level.** The mathematics leadership team will support the mathematics leader to develop, enact and embed the mathematics action plan. This team's responsibilities could include leading discussions during collaborative planning, and supporting and monitoring the learning and teaching of mathematics at a classroom level.
3.	**Every school has enabling structures that maximise the learning and teaching of mathematics.** Schools have a set time allocated for the learning and teaching of mathematics and regular (fortnightly) professional learning team meetings (or equivalent) for mathematics across the term. The school mathematics leader (or a representative) is given opportunities to further develop their leadership skills and is on the school leadership team, attending meetings as required. There are scheduled 'collaborative planning' sessions across all year levels and teachers are provided with opportunities to further develop their capabilities in mathematics.
4.	**Every teacher has an understanding of how to use data effectively to differentiate experiences in ways that maximise learning opportunities for all students and guide the learning and teaching of mathematics.** Teachers use data effectively to drive the learning and teaching of mathematics at a classroom level. They use data to guide planning and teaching to meet the needs of all students.
5.	**Every teacher has an ongoing commitment to the development of their content knowledge and progressions of learning.** Teachers have a clear understanding of the mathematics curriculum, progressions of learning in mathematics and how different mathematical concepts link with each other.
6.	**Every teacher has a repertoire of responsive pedagogical choices and progressive development of effective pedagogical content knowledge.** Teachers use a range of appropriate pedagogies, relevant to the focus of the lesson, to ensure that all students experience success in mathematics.

The mathematics team believes that working in partnership with schools, combined with the achievement of these six aspirational goals, will create the conditions to have a significant and far-reaching impact on the learning outcomes in mathematics for all students.

Priority Areas

To enable young people to become highly numerate, the *Get in2 Maths* strategy is framed around the four Improved Learning Outcomes areas:

1. **leading a culture of learning**
2. **knowing the conceptual terrain**
3. **making powerful teaching choices**
4. **assessing for growth and flourishing.**

These strategic directions contribute to the development of a system-wide culture of continuous improvement across diverse communities of practice.

In mathematics, a focus on **leading a culture of learning** aims to:

- support leaders to develop targeted and explicit improvement agendas
- strengthen the capabilities of leaders to lead a culture of highly effective professional learning
- support leaders to embed strategic processes that enable the implementation of research-informed and engaging teaching practices.

In mathematics, a focus on **knowing the conceptual terrain** aims to support teachers to:

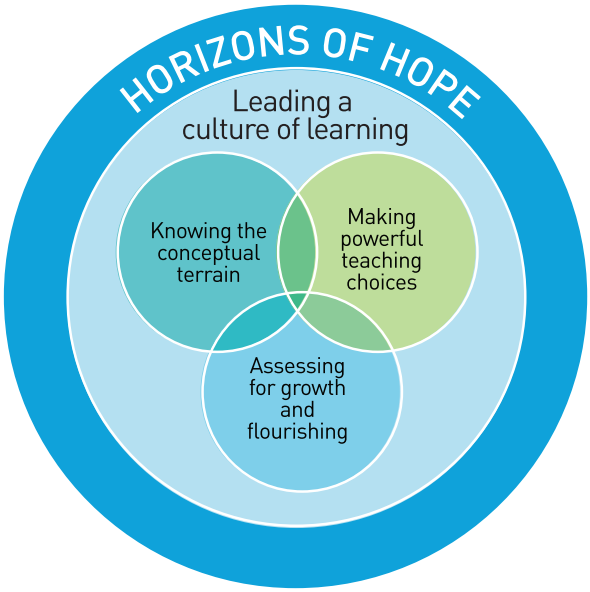
- develop a deeper understanding of students' numeracy development
- design teaching programs and sequences of learning that develop conceptual understanding in mathematics
- use progressions of learning to identify what students know and can do and what they need to learn next
- use evidence-based teaching strategies to develop specialised mathematical content knowledge.

In mathematics, a focus on **making powerful teaching choices** aims to support teachers to:

- deliver high-quality learning experiences, using a range of appropriate pedagogies which meet the specific learning needs of individuals
- deliver high-quality targeted instruction to extend the knowledge and skills of every student regardless of their starting point.

In mathematics, a focus on **assessing for growth and flourishing** aims to support teachers to:

- measure the growth and progress of individuals by collecting continuous evidence of student learning
- identify and use high-quality data to inform teaching practice
- use data to inform a well scaffolded learning sequence.



Strategic Partnerships

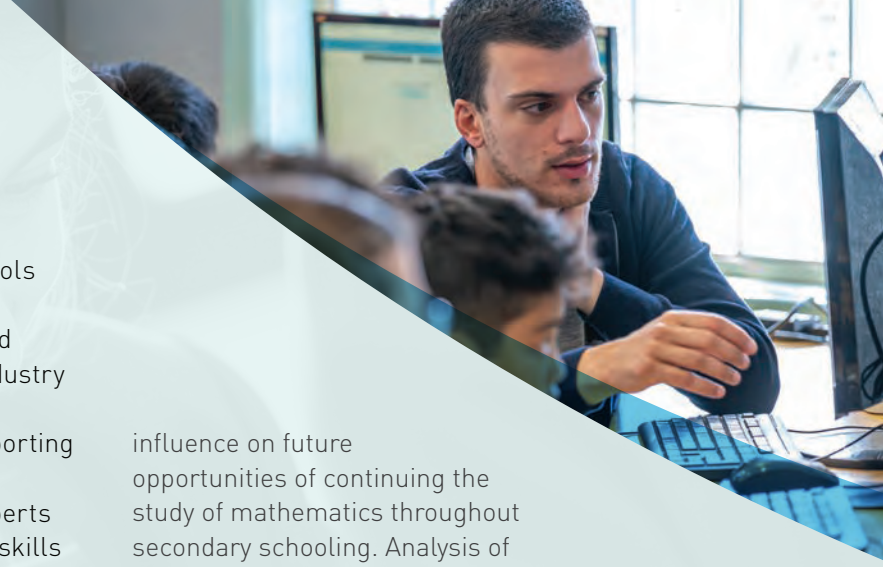
Recognising the importance for schools to have opportunities to engage with researchers, MACS has formed strategic partnerships with universities with the best expertise in the learning and teaching of mathematics. Through these partnerships, teachers and leaders will have opportunities to engage in targeted professional learning or accredited study that contributes to the development of a system-wide culture of continuous improvement.

Modes of engagement

The modes of engagement with Catholic schools are relational. They are a partnership, responsive to the identified priorities of individual schools and promote collaboration to improve teaching skills and student outcomes using the modes of engagement.

The purpose of each of the modes of engagement is outlined here:

- **resources and tools** – tools, resources, exemplars and online materials to support schools to improve practice
- **professional learning programs** – structured sequences of learning sessions/forums involving groups of staff
- **networks** – mechanisms for school staff to network across the same role



- **communities of practice** – groups of schools inquiring into a shared area of focus
- **brokered industry services** – services and products brokered by the system from industry leaders and experts
- **mentoring** – experienced individuals supporting others in guiding relationships
- **specialist individual support** – skilled experts providing specialist knowledge, advice or skills in targeted areas
- **formal accredited courses** – participation in accredited learning programs
- **coaching** – structured growth conversations supporting teachers and leaders to achieve specific goals
- **policy and research guidance** – research syntheses and papers designed to guide and inform the evidence base of school practice.

The modes of engagement help provide clarity around the nature of the partnership between schools and MACS.

Some modes of engagement have been designed to be open and accessible to every staff member in a Catholic school, while other modes may involve more sustained capacity-building over time in negotiation with MACS.

The implementation of the mathematics strategy is responsive to national, state and sector priorities and is influenced directly by school needs. As such, the plan will be revised annually and implemented within the scope of the modes of engagement.

The implementation plan recognises the importance of a good start in numeracy education and the influence on future opportunities of continuing the study of mathematics throughout secondary schooling. Analysis of Melbourne Catholic schools NAPLAN data suggests that performance in Year 3 NAPLAN explains two-thirds of the difference in student achievement in Year 9.

Further, a large study by the Australian Council for Educational Research found that students who were strong performers in Year 12 mathematics (irrespective of the level of mathematics undertaken) have very high first-year university pass rates. The study also suggests that in most disciplines and institution groups, senior secondary mathematics background (measured by the highest level of mathematics undertaken and results) remains a statistically significant influence on first-year university subject outcomes. [4]

Maximising opportunities and achievement of all students at all levels is the overarching goal of the *Get in2 Maths* strategy.

4. McMillan, J and Edwards, D 2019, *Performance in first year mathematics and science subjects in Australian universities: Does senior secondary mathematics background matter? Final report*, Australian Council of Deans of Science and Australian Council for Educational Research, Canberra and Camberwell, accessed 9 December 2020 https://research.acer.edu.au/higher_education/62.

Implementation Plan

The implementation plan focuses on the development of professional learning for teachers, including strong content knowledge and sophisticated pedagogical practices and assessment strategies. Professional learning programs intentionally privilege the teachers' knowledge in the early years of schooling and develop repertoires of pedagogical choices as students progress through upper levels of learning.

Peter Sullivan says, 'Improvement of the experience of students and improvement in measurable achievement is predominantly the result of collaborative school-based planning and professional learning, supported where necessary by the mathematics team and others.'

MACS learning consultants – mathematics will work in close partnership with the school mathematics leaders to further develop their leadership capabilities. This will enable leaders to share learnings with other colleagues and to continue to support teachers to improve the learning and teaching of mathematics in classrooms.

As professional learning programs are best implemented within school teams, the need for significant school-based leadership is required. To support this, various programs, including accredited study, will be offered for current and prospective leaders and teachers of mathematics.

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School featured in photos: St Pius X School, Heidelberg West and Emmaus College, Vermont South.