

St Joseph's RC Primary School Case Study

NW Maths Hub 3: Journey to Mathematical Excellence – SLE Model 1 Innovation Programme

"We are constantly evolving and strengthening what we do. We've never wanted to adopt a one maths scheme approach because we knew that would never work for our children. We wanted something bespoke to our children, to meet their needs. We are confident that our approach is the right one for our children. You can see it through our pupil voice, in pupils' attitudes, in their work and in their pride."

Kathryn Vernon, Headteacher

Background

St Joseph's has 245 pupils on roll, 14 teachers and 11 teaching assistants. It is in an area of high deprivation. Fourteen pupils have English as an additional language, 50% of pupils qualify for pupil premium funding, and there are eight looked after children. Kathryn, the current Headteacher, joined the school in September 2013. Pupil outcomes were poor, particularly in the area of maths, which was a particular area needing improvement. In September 2014 and September 2016 the school was considered by Ofsted to require improvement. Following an inspection in January 2019, the school is now rated as good.

Interviewees – quoted in italics

Kathryn Vernon, Headteacher, St Joseph's Roman Catholic Primary School, Wirral

Helen Last, Maths Subject Leader, St Joseph's Roman Catholic Primary School, Wirral

Also interviewed

Claire Martin, Maths Hub Workgroup Lead, North West Maths Hub 3

Journey to Mathematical Excellence Work Group

This Work Group, brought together by North West Maths Hub 3, comprised nine primary schools from five north west local authorities. They were nominated because of the need to improve attainment and/or progress in maths, together with needing to improve teacher subject knowledge and the quality of maths teaching.

The group first met in October 2017 with a briefing for the Headteachers and Maths Leads of the schools involved. The programme was outlined and a position statement for each school was produced. There followed a one day visit to each school by the Work Group Lead and a Specialist Leader of Education (SLE) who developed a diagnostic assessment. In December the Maths Hub Lead and Work Group Lead considered the diagnostic school visits, identified common issues across all schools and planned next steps in the programme, with a focus on the key principles of teaching for mastery.

During the year the following activities took place:

- Year group CPD days for Year 1-6 teachers from all of the schools.
- All teachers were given the opportunity to observe a maths lesson in schools where teaching for mastery approaches are well developed

- A day's CPD for maths subject leaders. This covered the 5 part lesson structure, digging deeper into reasoning and two CPD sessions for the subject leaders to deliver in their own schools in the spring term.
- 1 day support visit to school by a Specialist Leader of Education (SLE), the focus being chosen by the school from a list of options. This included evaluating the action plan, undertaking a learning walk, data and book scrutiny and evaluating how approaches and actions were being developed in the school.
- A day's CPD for maths subject leaders. Evaluation of progress, use of an Education Endowment Fund self-assessment tool, intervention in mathematics and a CPD session for the subject leader to deliver in their own school.
- A school visit by the Maths Hub Lead and Work Group Lead to each school to meet with the Headteacher and maths lead. Evaluation of the programme and identification of key actions to further develop mathematics.

Evaluations of the programme at the end of the year were extremely positive.

What has happened?

The school's journey with the Maths Hub started in October 2017 when they were recommended for this programme by a local authority officer. Extensive work to develop a mastery curriculum had been undertaken in 2016/17 with an independent Maths Consultant that worked on behalf of the St Helens TSA and NW Maths Hub 3, so the school had already begun to instigate change. This meant that there was already a really strong, well-resourced curriculum in place.

Beginning in October 2017 North West Maths Hub 3 trained Helen, St Joseph's Maths Lead, to develop teacher skills even further, with a key focus on enhancing the confidence of practitioners. Helen was able to bring her learning back to staff, who felt as though they were benefiting from extensive support and training. Staff told Ofsted inspectors when they visited in September 2019 about how much support they felt they had had in this area of work. They felt in particular that it had strengthened their subject knowledge and equipped them to improve their questioning techniques.

The SLE allocated to the school as part of the programme visited twice, undertaking a learning walk, a book scrutiny and, at the beginning of the programme, helping to create a personalised action plan with a programme of support. There was also direct support from the Work Group Lead, Claire Martin.

All teachers visited other schools to see 'The Five Part Lesson' in action. This approach was then adapted to meet the perceived needs at St Joseph's. Teachers were encouraged to sit the children in mixed ability pairings and discuss problems – which all classes now do, not only in maths lessons. They have found that this helps children to develop their vocabulary as they justify their responses, show how they have arrived at a conclusion and increase their independence. Children are given an open problem-solving task (HOOK) and encouraged to explore it, with the teacher intervening to see what is happening and getting the children to feed back. For the staff at St Joseph's this is seen to be a much more child-centred way of doing things. Pupils are given the tools to explore for themselves and draw on all of the areas of Maths that they have mastered. They are now more resilient and less dependent on teacher direction.

Children are often used as teachers, modelling their methods and their thinking. If a child does a particularly good presentation of how they have tackled a problem and are able to present it in different ways, they become a 'Grand Master'. They are allowed to wear a special 'Grand Master' hat for the lesson, and show their method to help other pupils. They work really hard to achieve this. They can articulate how they know the answer to a problem and they are increasingly confident in expressing themselves. Many of the children

used to be afraid of making mistakes in maths. *“The children now understand that maths isn’t about getting it right, it’s about trying. They are far more willing to have a go, whether they are right or wrong. It’s a much safer environment – that fear factor has gone.”*

“The children’s attitude to the new style lessons has changed. They thoroughly enjoy them and they are now far more excited by maths. They are pleased with themselves and enjoy the level of challenge. Our expectations of the children are far higher and they have risen to that challenge. When we ask the children what subject they enjoy, now they say Maths – it’s great. We’ve seen a real buzz in the classroom.”

“To feel successful at something is a gift.”

This change in approach to maths teaching was introduced across the whole school at the same time. All staff had the ‘Five Part Lesson’ training and it was decided to make it bespoke for the school before its introduction in December 2017. Teachers didn’t feel that they had to buy into a ‘scheme’ but discovered what was best for their children and adapted the basic principles accordingly. The staff have continued to develop their practice, for example so that not only can children explain things verbally but they can formulate a written reasoning response. During KS1 moderation in 2018 the Moderator commented on how easy it was to see clear evidence of how pupils were working and their understanding of Maths because the work in their books was so clear.

School leaders recognise that teaching and learning in Maths across all classes from EYFS to Y6 is now good and evidences consistency of practice and approaches.

Is this what you thought would happen?

At the outset the leadership of St Joseph’s did not know much about the programme other than the fact that, following the initial diagnosis, they would receive a personalised programme of support. In fact the diagnosis verified what they knew in terms of teacher expertise and confidence, and they worked alongside the SLE to plan how to take this forward.

The allocated SLE only visited the school twice and in hindsight the Headteacher feels that it would have been useful to have more contact with her and to actually visit her school in the course of the programme. The Work Group Lead visited more often. Her availability and support were greatly appreciated, especially by the Maths Lead and she continues to be a useful link. As a result the Maths Lead feels able to drive the programme in school with confidence and passion, which are passed on to the rest of the staff.

The school leadership were aware that they had to focus on Maths because of the low attainment at the end of KS2 in 2016 and the 2016 Ofsted report. But English also had to get much stronger at the same time so they had to work hard on that too. In the first year they had focussed on an appropriate Maths curriculum, subsequently concentrating on teacher practice.

One of the outcomes of the success of this programme at St Joseph’s which had not been anticipated is that staff are now all really excited about teaching Maths. As a consequence of this the school has accessed more Maths Hub provision. This includes an Early Years programme, Developing Number Fluency, which is laying a strong foundation for the rest of the school. They are also involved in another course, Mastery in an Intervention Context, initially in Y4, focussing on supporting low attaining pupils.

What is causing this?

A key element in the success of the programme was the fact that all staff were fully on board with the need for improvement and change. The Headteacher says *"We've got great staff who are working in challenging circumstances. They all want the best for our children. They knew it was a key focus for the school because data had taken a huge dip, they acknowledged that teaching of mastery in Maths needed to develop and they were excited about making improvements. Everyone was convinced that it could work for our children. They had an abundance of training and support, including new resources. We developed regular 'bring and brag' sessions where we looked at maths books – not a scrutiny but showing colleagues what they were doing, sharing good practice. It worked really well."*

Another key element in the improvement journey is that teaching assistants have been fully involved, attending Maths Staff Meetings and training. Early Years teaching assistants have had training for the Mastery Project. *"All training we've been involved in has been fun and people have been willing to get stuck in and have a go. For some people that has taken the fear factor away and given them more confidence."*

When asked why the 'Journey to Mathematical Excellence' had been so successful at St Joseph's, the Headteacher said: *"Commitment. We owe it to our children to ensure that they fly and succeed. We had a genuine whole-staff approach. It matters to us that we do the best for our children to enable them to succeed. Staff have a clarity of purpose. They have ownership. We empower them and that creates capacity."*

"We feel now that we're almost a beacon in many ways because of our success in Maths; we've moved massively and we feel as a school confident and passionate about how far we've come."

"Making maths relevant to real life has been an important focus. It's given children and teachers a real purpose about why they are doing the maths and how they can apply it in many different contexts. That's from early years, right through the school. We're equipping them for life, using the Teaching for Mastery approach."

What next?

Having made substantial progress in maths over the past year, the school now wants to increase the percentage of higher attainers in the subject. They feel that they need to further improve teacher questioning to promote deeper thinking for those children. They also want to maintain interventions for lower attainers to further support accelerated progress. The recent Ofsted inspection recognised that some good links are made between subjects but the school now wants to further extend cross-curricular learning.

Moving forward the Work Group Lead, Claire, has helped to introduce the notion of a lesson study approach. Triads of teachers will work together, choose a focus, observe each other and plan lessons together to strengthen teaching and learning. This is a new step forward made possible due to the strength of maths teaching which school can now refine.

Maths is not seen as an area of strength in The Wirral, yet there are not currently strong links between the Hub and Wirral schools. St Joseph's Headteacher has been promoting the work of the Maths Hub with other local Headteachers, and schools that have worked with the Hub have all shown good improvement. *"Word has spread about the improvements we've made and now we're the ones that people are seeking advice from. Now we feel that maths is a strength of the school."*

Aware of the danger that much of the responsibility for driving this programme could be seen to be on the shoulders of the Maths Lead, the Headteacher has recognised the need for succession planning. There are now two Lead Practitioners in the school, one of whom is the Maths Lead, the other is the Y6 teacher. They are outstanding teachers and work with teachers across the school, coaching and mentoring staff to develop consistency. A less experienced teacher is now shadowing and learning from the Maths Lead this year with a view to joining the Maths Team. In addition, as the Lesson Study approach is implemented, staff will be given autonomy in small groups to develop maths in school. The Headteacher believes that there is a lot of strength and capacity to improve further in the school.

“The staff are now committed to the new way of working – there’s no going back. It’s embedded in what we do and how we teach maths.”

Kathryn Vernon, Headteacher St Joseph’s Roman Catholic Primary School

[Appendix 1](#)

[Appendix 2](#)

Appendix 1 - St Joseph's RC Primary School Maths Data

EYFS - Percentage of pupils achieving a Good Level of Development

	School	National
2018	62	71.5
2017	66	70.7
2016	63	69.3

- Pupils enter the Reception class below average, with a significant number of pupils well below. Despite this they make very good progress from this low baseline with the percentage of pupils achieving a Good Level of Development sustained above 60% for the last 3 years.

KS1 - Percentage of pupils achieving the Expected and Higher Standard

	School 2018	School 2017	School 2016	National 2018	National 2017	National 2016
Maths EXP	65	71	70	76	75	73
Maths GD	10	14	22	22	21	18

- Attainment in Maths in 2018, although below the national average, was impacted by the high percentage of SEND pupils within the cohort and represents good progress from a low baseline.

KS2 - Percentage of pupils achieving the Expected and Higher Standard

	School 2018	School 2017	School 2016	National 2017	National 2016
Maths EXP	79%	40%	25%	75	70
Maths GD	3%	0%	0%	23	17
Maths Average Scaled score	102	98	96	104	103

- Attainment in Maths at the expected standard has increased from 25% in 2016 to 79% in 2018 demonstrating a significant and sustained improvement over two years and is now above the national average.

Appendix 2 - Comments from Recent Ofsted Reports

Ofsted Monitoring Inspection Visit – March 2018 - 'Requires Improvement'

Since the previous inspection, you have introduced a new whole-school approach to the teaching of mathematics. You have focused on improving the quality of teaching, learning and assessment and have changed the structure and content of mathematics lessons significantly. Pupils are now regularly challenged to think hard and use their skills and knowledge to solve mathematical problems. This is having a positive impact on pupils' ability to reason, and these positive changes are helping to improve rates of pupils' progress. In the lessons that we visited, and in the books we reviewed, pupils showed very good attitudes to learning.

Teachers have been provided with specialist training to support developments in mathematics. A consultant has worked alongside the mathematics team to develop the new curriculum, as well as to improve the systems for scrutinising pupils' work and observing teaching. This support has helped to accelerate the improvements that have been made in mathematics over the past twelve months.

Ofsted Section 5 inspection - January 2019 - 'Good'

In mathematics, the work in pupils' books reflects the professional development that staff have received on sequencing the curriculum. Pupils use the calculation skills that they have learned previously to solve increasingly complex mathematical problems. Staff are adept at addressing misconceptions in pupils' understanding.

The work in pupils' books shows that current pupils in key stage 2 are making good progress in writing and mathematics, often from low starting points.

By the end of key stage 1, the attainment of pupils is below the national averages. However, pupils make good progress in their learning in reading, writing and mathematics.

Teachers are positive about the support that they have received to improve their skills in subjects across the curriculum, including English and mathematics.

Over the last three years, there has been a dramatic increase in the proportion of pupils who achieve the expected standard in reading, writing and mathematics at the end of key stage 2. Over three times the number of pupils achieved this standard in 2018 compared with 2016.

In mathematics, current pupils' work is starting to provide pupils with opportunities to use their reasoning skills to solve problems. However, the number of pupils attaining the higher standard in mathematics at the end of key stage 2 has been below average over the last three years.