

**Maths Hubs  
Evaluator in Residence  
2022/23**

**Evidence and reporting  
summary  
Hub: Central**

Evaluator in Residence Summary	
Maths Hub	Central
Strategic Goal	Primary
Research question(s)	How do schools overcome barriers to sustain teaching for mastery?
What is the case?	Cases of schools who have overcome barriers to sustain teaching for mastery. One school as an in-depth case study and three schools as a wider group.

### Context

Central is a large hub working with approximately 650 schools across all phases. It serves an area with high levels of disadvantage, sometimes masked by the performance of some top performing grammar schools. The Sustaining Work Group is a relatively new and innovative way of working with schools in the long term, and this was the area of focus for the project. In this hub, schools in the Primary Sustaining Work Group are provided with sessions designed for maths leads, and are also offered a menu of two- and three-part workshops, depending on the needs of the school and individual teachers. Topics were offered based on national aims and school requests.

#### Workshop options this year:

- Understanding Representation and Structure
- Collaborative Planning with a focus on Scaffold, Challenge and Mathematical Thinking
- Developing Practical Strategies linked to Multiplication
- Parental Engagement for schools engaged with Mastering Number
- Teaching for Mastery Introduction for new to school leaders/teachers
- Mathematical Journaling
- EYFS

For this project, the Maths Hub Lead and primary hub leads identified schools who would exemplify how barriers for sustaining teaching for mastery can be overcome, to act as case studies.

#### In-depth case study

##### *Southlands Primary School*

Southlands is a large primary school in the Midlands. It has three classes in each of Reception to Year 6, with four classes in one year group. The school is in a socially deprived area and has a high proportion of children with SEN and EAL. There has been a turbulent history of relationships with parents. Ofsted graded the school as Outstanding in its last three visits. Southlands is the lead school for a five-school MAT. Staff have been engaging with mastery since 2018. The two maths leads are Primary Mastery Specialists who lead Work Groups for the hub. The trust maths lead also supports primary schools as part of the local Maths Hub.

The barriers overcome by this school include:

- Establishing teaching for mastery in a large school with high proportions of children who are disadvantaged, and who have EAL and with SEND, especially SEMH related needs.
- Children at the school have expressed low aspirations.
- Being part of an active and successful trust brings increased support, but it also results in experienced staff moving to different schools within the Trust to share their expertise.
- The school frequently has staff changes and inducts new staff into its ethos and practices.

#### Schools in the wider group

##### *Buddington Primary School*

Maths was a strong subject at Buddington prior to engaging with teaching for mastery; the school performed well in local and national league tables, and many children moved on to the local grammar school at the end of Year 6. The school started to engage with Central to learn more about mastery. There is an established maths lead who is also the DHT, assisted by a subject coordinator who works in the opposite key stage.

The barriers overcome by this school include:

- Ensuring staff have appropriate subject knowledge to teach for deep understanding.
- Supporting the wider school community to understand mastery, including parents and governors.
- Maintaining momentum when priorities change e.g. due to Covid or because another subject is prioritised.

##### *Fostergate Primary School*

Fostergate has Pupil Premium numbers that are about three times the national average, and many pupils are from families with low aspirations. Before the new headteacher joined in 2019, pupil behaviour made teaching extremely challenging, teachers had low expectation of pupils, and staff turnover was high. Maths is led by two subject leads (working in different key stages) who have developed materials to support staff to understand how maths is taught following a mastery approach; this has led to more consistent teaching.

The barriers overcome by this school include:

- Ensuring staff have the right mindset for teaching for mastery and move away from the belief that “our children won’t get to the national average”.
- Addressing inconsistencies in teaching due to high staff turnover.

#### Greenpark Primary School

Greenpark is in a deprived area of a large city and has very high levels of Pupil Premium. Children often arrive at the school with very low starting points. Covid had a significant detrimental impact on these starting points, and on pupil engagement and attainment; the impact is still being felt. The school has two maths subject leads, working in different key stages. Greenpark initially got involved with Central in the mid-2010s.

The barriers overcome by this school include:

- Meeting the needs of Pupil Premium pupils who join the school with low starting points and enthusiasm, especially since Covid.
- Tackling low parental engagement with maths, and helping them to support their children when they lack confidence in their own maths skills.
- Ensuring the CPA approach is embedded in all classrooms.

### Activity and data collection

The in-depth case study of Southlands took place during two prolonged remote interviews with the maths leads and on a one-day visit to the school, which included a learning walk to observe maths lessons, and meetings with children, ECTs, one of the maths leads, the headteacher and trust CEO. The other schools each took part in an online interview lasting one hour. The subject lead (also DHT) and subject coordinator were interviewed for Buddington. For Fostergate, the interview was with the headteacher and one of the subject leaders. For Greenpark, the interview was with one of the subject leaders (also DHT). Notes were then written up and sent for approval, and shorter follow-up conversations took place with one of the original interviewees from each of the schools.

### Significant themes

Themes	Possible implications
<p><b>Schools find it easier to overcome barriers to sustaining teaching for mastery if it aligns with their school vision.</b></p> <p>In successful schools, evaluators found there is a shared belief across the school, and trust, which aligns with the Maths Hub and the NCETM vision that education is transformative. Teaching for mastery feeds into this belief. There is a common vision that all children can learn maths, and in the most successful schools this is widely articulated.</p>	<p>Opportunities for all Mastery Specialists to build their knowledge of Mastery Readiness would help them to support schools at different stages of the pathway, even in Sustaining, where there has been a change in staff and therefore a need to focus on school vision.</p>
<p><b>Engagement and commitment of senior leaders is crucial.</b></p> <p>Evaluators noted that this can be exemplified as:</p> <ul style="list-style-type: none"> <li>- Senior leaders’ articulation of a shared vision in line with teaching for mastery philosophies</li> <li>- An embedded belief across the school, stemming from senior leaders, that all children can learn maths</li> <li>- Senior leaders trust maths leads</li> <li>- Senior leaders allocate time to think about mastery and actions</li> <li>- Acknowledgement from senior leaders of the workload involved with teaching for mastery and the need for teachers and leaders to be given time if this is to be successful</li> <li>- Senior leaders’ commitment to maths even when other areas become a priority</li> <li>- Guidance on teaching for mastery for new staff and supply staff</li> </ul>	<p>Being able to identify examples of the features of senior leaders’ commitment will be useful in supporting schools.</p>
<p><b>Leadership of maths may take different forms.</b></p> <p>Evaluators found that larger successful schools sometimes have a team of maths subject leads and this spreads expertise across the primary age group and is an effective model for succession planning. In smaller schools and those not in large trusts, Work Groups are an important community for maths leads who may lead multiple subjects.</p>	<p>Building in support for maths leads is a valuable part of Sustaining, and opportunities to establish communities of maths leaders are important even when the Work Groups take a menu approach.</p>
<p><b>Commitment to professional development is deeply embedded in successful schools.</b></p> <p>Evaluators noted that in successful schools, there was a recognition from the school and trust senior leaders that teaching for mastery is ‘tough’ and requires ongoing and ‘relentless’ subject and pedagogical knowledge development. Teaching for mastery cannot be sustained with a one-off professional development event. In successful schools,</p>	<p>The Sustaining Work Groups are well positioned to support ongoing professional development of teachers’ knowledge.</p>

time is allocated to this development. This is also part of the recruitment of new teachers. Successful schools look for applicants who are eager to engage in ongoing professional development.	
<p><b>Live observation and analysis of maths lessons are an effective form of professional development in some successful schools.</b></p> <p>Evaluators found examples of successful schools where observations of learning in live lessons are a form of CPD, which stems from mastery approaches. Teachers, including ECTs, could identify what they had learned from observing and talking about maths lessons and gave examples of how they used this in their own practice. When Mastery Specialists host sustaining Work Groups in their own school, they invite colleagues to observe alongside sustaining participants.</p> <p>When teachers who participate in Work Groups feed back findings to staff, it is challenging to build the same level of subject knowledge in colleagues who haven't had the experience of the live observation.</p>	Examples of the success of live observations will be useful in promoting this as a continuing form of professional development through Sustaining Work Groups. Maths Hubs should continue to consider how to support maths subject leaders to cascade ideas, especially those early in their involvement with teaching for mastery.
<p><b>Some successful schools have established ways to enable collaborative planning.</b></p> <p>In some schools, there is shared PPA time across all year groups where maths leads can support staff in planning.</p> <p>Successful large schools consider how to group teachers in year groups so that there is always one member of staff who has experience and passion for teaching for mastery of maths.</p>	Hubs should continue to consider how Sustaining schools might be best grouped to promote collaboration. They can continue to plan tasks which support collaboration in schools and develop how maths leads can feedback to staff on their planning.
<p><b>Successful schools have confidence to adapt published schemes.</b></p> <p>Evaluators found examples of schools where staff are supported in using a published scheme flexibly alongside resources such as the NCETM Curriculum Prioritisation and DfE Ready to Progress materials to craft effective lessons.</p>	Maths Hubs are aware of the strong subject knowledge required to use a scheme purposefully. They should continue to consider how to support teachers' planning.
<p><b>In successful schools, fidelity to the principles and practices of teaching for mastery is embedded.</b></p> <p>Evaluators undertaking learning walks found that the features of teaching for mastery were evident across lessons. The careful crafting of lessons is noticed and celebrated by the maths lead.</p> <p>In one successful school, staff are challenged by the maths lead to consider fidelity to the principles of teaching for mastery by reflecting on the contributions of the Five Big Ideas and to consider what teaching for mastery would be like without each one. For example they consider what a teaching for mastery lesson would be like if not planned in small steps, or if fluency was not developed.</p>	Senior leaders should be supported in understanding the crafting of lessons based on the Five Big Ideas, and the time this takes.
<p><b>Basecamp support for schools in Sustaining is valued.</b></p> <p>The Maths Hub Sustaining Basecamp is appreciated and used well by teachers. They like the sense of community and sharing of expertise. Schools feel known, understood and supported. This Basecamp gives teachers access to the Hub Primary Leads who are very highly valued.</p>	Effective Basecamps provide a feeling of community and allow access to charismatic and knowledgeable Maths Hub Leads. Maths Hubs should consider how to support those who lead these Basecamps in terms of time, and succession planning for key staff.

## Conclusion

The cases considered by the hub and Evaluators in Residence were of schools which had each overcome barriers but which differed in terms of their size, the characteristics of their intake and the way they work with other schools in trusts. However, they shared common features. These shared features appeared to support them in overcoming barriers. For example, all of the schools were involved with other NCETM and Maths Hubs programmes, as well as the Sustaining Work Groups. They all had headteachers who were fully committed to teaching for mastery as part of their overall vision for transformative education. Each school had a well-articulated and shared vision for maths, with high expectations for all children. There was more than one maths subject leader in each of these, relatively large, schools. Teachers in each school were supported in planning carefully for their classes, making flexible use of a range of resources.

The Evaluator in Residence project has allowed evaluators and the Maths Hub to identify features of schools which have been successful in overcoming barriers to sustaining teaching for mastery. These illuminative case studies offer exemplars which will be used for further work in supporting schools.