

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

**Evidence and reporting**  
**summary**  
**Hub: Angles**

<b>Evaluator in Residence Summary</b>	
<b>Maths Hub</b>	Angles
<b>Strategic Goal</b>	Primary
<b>Research question(s)</b>	How do the Sustaining Work Groups support lasting change in schools? What is the impact of the Maths and Science RIWG?
<b>What is the case?</b>	2 x contrasting primary schools in the Sustaining project Field work within the Maths and Science RIWG

### Context

Angles is a well-established Maths Hub covering the areas of North and East Norfolk and Suffolk. The hub covers a wide geographical area and a wide diversity of schools, from large city schools to tiny mixed age primary schools, and addresses individual needs as a result. Angles has undergone considerable growth and profile development in the past four years, which means that more primary schools have been able to engage over a longer period of time, and therefore, focusing on sustaining mastery becomes more pertinent to the maturing nature of the hub as a whole. The longevity and diversity within this hub allow evaluation of what sustaining 'looks like' in two schools in contrasting circumstances.

Two contrasting primary schools were visited as part of the 'What sustains Sustaining?' research question. Case 1 – 'Woolheart Primary' (pseudonym) is a single/mixed form entry school in a rural Suffolk community and is an LA maintained school. Its current Ofsted rating is 'Good'. In 2021/21 the percentage of pupils requiring SEN Support 6.67%, pupils with EAL 2.5%, pupils receiving Pupil Premium 11.67%. Woolheart has engaged with the hub since 2018, starting in Mastery Development and continuing with Sustaining Mastery in 23/24, Mastering Number in EY/KS1 and in KS2 23/24, and all staff have engaged or continue to engage on SKTM programmes. The maths lead is a Cohort 6 Specialist and undertaking SD Lead in 2023/24. The headteacher is a Headteacher Advocate and working with the hub on the PEIA Expert panel. Case 2 – 'Mountview Primary' (pseudonym) is a multiple form entry (2/3 classes per year group) in an urban Suffolk community and is part of a MAT. The school's current Ofsted rating is 'RI'. In 2021/21 the percentage of pupils requiring SEN Support 11.76%, pupils with EAL 54.2%, pupils receiving Pupil Premium 42.68%. Mountview has engaged with the hub since 2019, starting in Mastery Readiness and continuing with Sustaining Mastery in 2023/24, Mastering Number at EY/KS1 and at KS2 2023/24, with some wider engagement on SKTM programmes.

### Activity and data collection

Establishing contact was simplified because the evaluator and the Maths Hub Lead had previously met, and the evaluator was also visiting the hub to lead a PD Lead cohort. Plans were discussed and finalised during October and November 2022. Fewer visits took place than originally envisioned, reflecting the workload of all involved. Plans were made easier through using shareable documents and 'reply all' email chains.

Selecting two schools was an iterative process and there was an element of convenience sampling once the broad selection criteria (a school in 'ideal' circumstances and 'challenging' circumstances) were agreed. Woolheart School was chosen because the maths lead was a Cohort 6 Mastery Specialist, the school hosted Work Group TRGs, and was led by a Headteacher Advocate. Mountview School was chosen as it was in a PEIA area and in a 'Requires Improvement' Ofsted category, and had an interesting and developing relationship with the Maths Hub. The evaluator did one half day visit to each school in spring 2023, accompanied by a member of Maths Hub Leadership. The Maths and Science RIWG was run online and led by the Maths Hub Lead, so it was convenient for the evaluator to conduct some field work. Data was gathered by Work Group attendance, a conversation with the Work Group Lead and a focus group of participants, in spring 2023. The evaluator visited the hub for an evaluation workshop in June 2023, which was attended by the Maths Hub Lead and three Assistant Maths Hub Leads.

### Significant themes

<b>Themes (findings and process)</b>	<b>Possible implications</b>
<p>Sustained change did not happen 'by accident': it took commitment from the hub leadership, school leadership and maths leadership. In ALL fieldwork undertaken, the evaluator found:</p> <ul style="list-style-type: none"> <li>An articulated shared vision that 'all can achieve' in maths, realised by a coherent, ambitious curriculum</li> </ul>	<p>Consider which strategies for change are likely to be successful across all schools and thus how to</p>

<ul style="list-style-type: none"> <li>● Improvement in maths was part of a development plan</li> <li>● Schools reduced workload in one area to allow additional time for CPD</li> <li>● Deep commitment from leaders and participants</li> <li>● Consistency in key staff, and/or realistic succession planning.</li> </ul>	<p>integrate communication of these strategies across NCPs.</p> <p>Encourage schools to share their stories with their networks.</p>
<p>The degree of challenge and the mechanisms for change were not the same: successful actions are very dependent on context. The evaluator noted that:</p> <ul style="list-style-type: none"> <li>● Each school understood its specific challenges and devised realistic achievable changes. For example, the small school needed to consider how to sustain TfM in mixed-age classes and how to fund CPD where staff numbers were small. The school in a disadvantaged area needed to prioritise maintaining staff wellbeing and stress knowing there was higher turnover and wider achievement gap</li> <li>● The school in a challenging area did not have the same supply of TAs able to cover classes as the school in the more affluent area</li> <li>● The school in an 'Ofsted category' felt increased external pressure from their Trust and Ofsted to 'justify' their choices.</li> </ul>	<p>Consider when, and how, to address school context in designing and leading NCPs.</p> <p>Consider whether some schools need more resources than others to instigate the same level of school change.</p> <p>Consider how to support schools in Ofsted categories.</p>
<p>Engaged schools had evolved effective strategies to make resources 'go further'. The evaluator noticed:</p> <ul style="list-style-type: none"> <li>● Schools with sustained engagement took part in multiple Maths Hub projects over multiple years, involving multiple staff members,</li> <li>● The school with a specialist had the knowledge and confidence to not use an external scheme, and 'hosted' Work Groups in their school to cut travel and allow more internal staff to attend.</li> </ul>	<p>Consider what we can learn from these economies of scale across the network. Develop some 'quick wins' re. resource saving to recommend to schools.</p>
<p>The Hub's Leadership team had also evolved strategies to make resources go further. They explained to the evaluator:</p> <ul style="list-style-type: none"> <li>● They use all teacher CPD with the hub OR the Lead School's trust to signpost different NCPs. Examples include linking trust Subject Knowledge fortnightly sessions with pedagogical strategies used in SKTM such as the number line. This also provides a way to engage schools immediately who express an interest mid-year</li> <li>● They have developed a 'resource library' for schools wanting to try out manipulatives, collecting any unwanted resources from (e.g.) the council</li> <li>● They start partnerships from a variety of initial points, crossing hub boundaries in the short term if needed. E.g., if a MAT will only engage as a bespoke Work Group, they facilitate this in year one, before 'dispensing' schools to different Work Groups in subsequent years</li> <li>● The hub's leadership team immediately extended the work they had undertaken as part of this EiR pilot, choosing a 'middle ground school' for their primary SG case study.</li> </ul>	<p>See above but at a hub level. Give hubs an opportunity to discuss 'what works' for them.</p>
<p>Collaboration between the maths department and another is likely to bring benefits to both departments, but the nature of change in each department may be different. In the Maths and Science RIWG there was evidence that maths departments changed their curriculum, to ensure that students encountered relevant mathematical concepts in maths before they were applied to other subjects, and science departments honed their pedagogy to teach maths for fundamental understanding.</p>	<p>Consider how to evaluate the impact of future 'maths and...' Work Groups.</p>
<p>There is potential to grow the partnership between the Maths Hubs and the Science Learning partnership for the benefit of both organisations.</p>	<p>Consider whether, and how, to pursue this collaboration, including the potential for a joint Professional Lead programme.</p>

<p>The Maths Hub supported and developed their LLME community to survive, thrive and sustain Maths Hub activity. The MHLMT explained to the evaluator:</p> <ul style="list-style-type: none"> <li>• The hub develops their LLMEs from their initial engagement. Teachers who are part of a Work Group and who show leadership potential are encouraged to apply for LLME development opportunities</li> <li>• The hub 'matches up' the skills and experience of their LLME with that of a particular project. Some LLMEs are more skilled at leading SKTM programmes whilst others' skills are in school improvement</li> <li>• LLMEs involved with a Work Group are encouraged to lead other trust work, then signposting hub activity with the teachers they work with</li> <li>• Similarly, applications for LLME training projects from candidates without Maths Hub experience are often less strong, and these applicants are encouraged to be part of a project before applying for leadership</li> <li>• As Covid restrictions have eased, LLME have increasingly worked as a community. Thinking has moved from: 'LLME#1 leads sustaining, LLME#2 leads 5-8 (etc.) to 'How can we work together?'</li> <li>• The LLMEs have a collectively good reputation. Anything run by an LLME within the area is synonymous with good quality.</li> </ul>	<p>Consider the LLMEs' relationship with the hub. Develop our understanding of how to cultivate local leadership in a large, complex landscape.</p>
<p>It takes time, and co-ordinated working across the leadership team, to identify successful strategies for growth. Working as a leadership team to co-construct the Impact presentation highlighted areas of similarity between phases and thus sharing of good practice. The hub reflected:</p> <ul style="list-style-type: none"> <li>• Schools that have sustained engagement, and LLMEs that are retained, go hand in hand. There is synergy between school improvement, leadership development and teacher retention</li> <li>• It's hard to know 'What causes change? Is it one person? Is it a group?'. In success stories, change has started with one person or a group</li> <li>• The hub's vision and values take time to clarify within an area. Once established, it's easier to grow LLMEs who share and enact the vision.</li> </ul>	<p>Investigate and report on success strategies from mature hubs.</p>

## Conclusion

<p>The evaluation uncovered areas that positively impact a school's capacity to 'sustain Sustaining', and that the Primary Strand should ensure it is embedded in all TfM training. This involves gaining full commitment of the headteacher and SLT, and cultivating a whole-school shared vision in maths that 'all can achieve', as part of a school's development plan. There should be (or in development) a coherent, ambitious curriculum in maths. Schools should be encouraged to engage with multiple Maths Hub projects over multiple years. If the whole school is involved, there is evidence that maths teaching across the school will be good.</p> <p>A school's context means their enactment of Sustaining might be different, and mitigating all challenges might be beyond the scope of the Maths Hub. Variability in school size and demographic means that strengths and challenges will be different: some schools have challenges in releasing staff, some must commit considerable resource in ensuring TfM succeeds in special circumstances such as mixed-age classes or where a high proportion of children have additional needs. Schools have more flexibility and scope for innovation where they have a Mastery Specialist, a stable supply of well-qualified TAs and do not have to overcome challenges associated with being in a category. There is scope and rationale for working directly with parents and carers of younger children. Fledgling programmes addressing this, such as the 'maths with parents' theme in Sustaining, and the hub's planned maths anxiety RIWG could be a focus for future evaluation. The hub also suggested that the NCETM consider expanding its SKTM offer to including parents and carers.</p> <p>The Maths and Science RIWG is a good example of a project whose potential, after being honed, is now being realised as part of the regular NCPs. The evaluator found evidence of good pedagogical practice and partnership working across secondary school departments. Collaborative work between maths and science is often instigated as a 'one-off' activity in whole-school CPD, but there was evidence that groups of teachers working together for a year or two means they consider how to sustain the momentum of change, and overcome practical barriers. The observed changes to maths and science departments were different, with maths teachers focusing on how to make their curriculum dovetail better with science, and science teachers focused on incorporating good maths pedagogy into their teaching of science.</p>
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