Teaching for Mastery Lesson Design at The Glapton Academy A Primary Case Study

MathsHUBS East Midlands West

The Glapton Academy
A L.E.A.D. Academy

Teaching for Mastery Lesson Design Work Group

One of the biggest challenges facing schools as they adopt a teaching for mastery approach is how to design lessons. Working collaboratively with practitioners from across the East Midlands the project, we began by identifying the key features of mastery, before exploring a route through a lesson, that allowed teachers to link these together in a coherent manner. Essentially we were looking at how to turn theory into outstanding classroom practice. Though our research often went much wider what is captured here in these case studies, each participant school was asked to focus in on one aspect of lesson design, how it has been incorporated into classroom practice, and the impact it has had on learners.

Overview

Sarah Morley and Jamie Moseley are the Maths subject leaders for The Glapton Academy. Both new to the role, their role as class teachers in both Key Stage One and Two respectively gave them a unique insight into the position of maths across the school.

"Analysing data had shown that maths was a priority area that we needed to develop. Taking a Mastery approach and helping staff to develop their practice, we hoped that we would see a renewed enthusiasm for the subject that would lead to a positive impact upon outcomes. We knew that by leading by example we were to have a better chance at getting everyone on board and sharing the successes we knew we could achieve."

What we did at The Glapton Academy

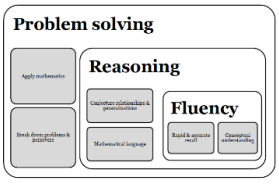
After discussing the elements of Maths Mastery and getting a clearer picture of what it looked like in the classroom, our project focus was lesson design with a focus on reasoning. Initially, we had to encourage staff to reflect on their views of maths and see how compatible this was with a Mastery approach. We led several staff meetings in developing staff's understanding of Maths Mastery and how traditional lesson design models needed to be reconsidered in order to embed Mastery – in particular reasoning - in the teaching and learning of maths.

Focus

Once we had discussed what Mastery is, we began to discuss the relevance of reasoning in a Mastery approach, the rationale for it and the impact it would have upon teaching and learning. Soon, our efforts became focused on what reasoning is, the forms it may take, how this is embedded within lessons and how it is captured whilst balancing the other aspects of maths.

Initial Stages

By focusing on reasoning, we began to ask ourselves key questions:

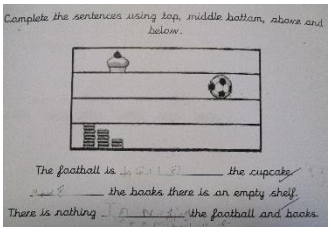


- What does reasoning mean?
- What does reasoning look like?
- Where is the place for reasoning in a lesson?
- How can reasoning be captured?
- How do we make reasoning accessible to all?

Maths Talk

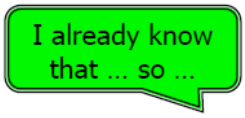
Through our discussions, we understood that in order to become a mathematician and reason clearly then developing mathematical vocabulary was a vital part. In order to develop mathematical vocabulary, we developed approaches to embed 'Maths Talk'. This worked well across all year groups as it gave children the opportunity to reflect on what they already knew and gave the teacher an insight into their prior knowledge. In helping overcome

Capturing Reasoning

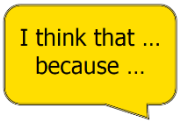


Despite Maths Talk being promoted in maths lessons, the issue of capturing it within books became the next challenge we faced. It was clear from lesson observations that where reasoning was communicated orally, it was not necessarily being captured in books. This was particularly an issue in Key Stage One where children had the difficulty in recording their understanding through writing. One solution we found to this problem was through

anxiety in communicating ideas, our Key Stage One team employed the use of Mastery Mics. Very simply, they were inflatable microphones that were colour coordinated to match the uses of explaining, teaching, inventing and proving. They had immediate impact, especially amongst reluctant boys, in exciting the children and seeing a higher level of engagement.

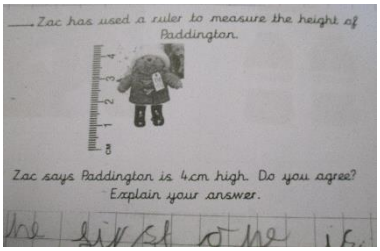


focusing on a few children within a lesson and scribing their ideas. Where this was not an issue, we found the use of stem sentences in modelling how to communicate reasoning really helped. We provided staff with sentence starters as an aid to their teaching. Soon we used a book scrutiny to determine the level of reasoning within books. It was pleasing to see that children were being exposed to reasoning and this was becoming more evident within books.

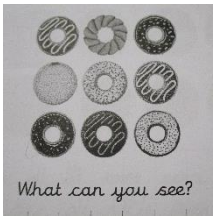


Challenges

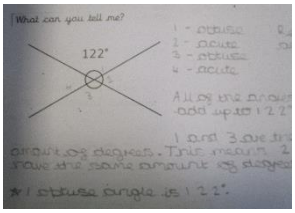
Our book scrutiny findings may have been initially positive however when we probed deeper, we discovered several issues. The first was that when we examined the books of children of different abilities, it was evident that those working at a higher level were being exposed more to reasoning and had greater evidence in their books. On further investigation, we found discrepancies between the levels of reasoning between ability groups. We also discovered that the position of reasoning activities were always towards the end of independent work and that often they were never reached. To overcome this, we encouraged staff in our feedback to consider the discrepancy in reasoning exposure and the position of reasoning activities. After giving each staff member time to act upon advice, we returned and carried out a follow up scrutiny to reassess the situation to see if any improvement had been made.



Useful Insight



Our follow-up scrutiny work had provided some useful insights into our work on reasoning. To begin with, there had been an improved level of exposure to reasoning across all ability groups. This demonstrated that teachers were aware that reasoning should be for all children within class and not just the more able or as an extra challenge. We also found a good variety of approaches to reasoning which meant teachers were carefully considering the activities they employed. Activities such as what's the same/different, am I right, explain how do you know, spot the odd one out, diagnostic questions, how many ways, do you agree, true or false and spot the mistake were all seen across the school. However, in certain areas, there appeared a confusion over the difference between problem solving and reasoning and how reasoning fits in best within a lesson structure and a sequence of work.



Summary and next steps

Reflecting on where we started our journey, there have been many successes. We believe that all staff have a better understanding of what constitutes a Maths Mastery approach and we have been impressed by the level of engagement from both staff and children. We believe that there is an enthusiasm for maths amongst children and that staff are willing to adapt their practice and take more risks. We understand that we have started a journey that is yet to be completed. Our school will be undergoing staffing changes and this already poses new challenges in building upon what we have started. However, we are quietly confident that we can continue the drive in achieving Maths Mastery and already we wish to investigate embedding reasoning further, developing mathematical vocabulary and explanation with a particular focus on increasing maths mastery children and investigating the issue of teaching mixed year group classes. We have been fortunate and pleased to have been part of this working group and believe that overall we have had a positive impact on outcomes at The Glapton Academy.

More Information

For more information about this project, or other workgroups and opportunities available through the East Midlands West Maths Hub:
Visit our website: http://www.emwest.co.uk
Follow us on Twitter: EM_MathsHub
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