

Maths Champions Case Study

Champion: Eleanor Miller

Setting: Blagdon Nursery School

INTENT
Introduction <i>A little bit about your setting, why you joined the programme and what you wanted to achieve from it.</i>
Our nursery school offers early education provision for a range of ages and needs. We have 3 mainstream classrooms for 3 – 4 yr olds – Apple Tree class, Cherry Tree class and Pear Tree class. We also have a provision base room (The Orchard) for children with specific communication and language SEND needs; these children then come and join our mainstream classrooms during our free flow provision. We also have another building which has 2 classrooms joined together (The Willows) for our 2 year old provision. Our motto is ‘start with the child and everything will follow’ so the children themselves pave the way for their educational journey with us. We strive to provide a provision of learning split between a planned curriculum with progression of skills throughout each term alongside having opportunities for the children to explore their own interests and cultural capital as well. I have been the teacher and Curriculum Lead at my nursery for 3 years now and felt that I needed to invest more into the role of supporting the wider nursery as curriculum lead. When our nursery joined the Reading Stronger Practice Hub there was a presentation advertising about spaces on the next Maths Champions course and I thought it was a great way to support the development of the wider education provision at nursery. I have personally always found Maths a tricky subject growing up and have never felt wholly confident teaching the subject since training and becoming a teacher so this course seemed like the perfect opportunity to further cement my understanding of maths and help support any other colleagues who had similar feelings and experiences of maths to me. My colleague has been completing her teacher training this year and she volunteered to take up the deputy maths champion role as she thought it would be useful to enhance this career development further.
How did you decide what to do? <i>What did the audits highlight, what changes did you consider and how did you identify the change/s to be made? Did the changes you considered come from the online training or resources etc?</i>
Myself and the deputy both decided to do the 3 maths courses together so we were upskilled as possible and it was helpful to discuss together what we had learnt and what we found helpful from the courses. We then completed the learning environment surveys together so we could find out how we needed to change the nursery environment both in the classrooms and in the garden. The staff confidence surveys highlighted that we needed to support staff both with planning maths in the room and group time sessions as well as supporting staff with improving their confidence and showing them that Maths can happen in various ways and experiences. I identified lots of changes that I wanted to make and how I wanted to alter the environment to further enhance our maths provision. I also identified resources I wanted to buy and create to help make maths more purposeful and fun within our sessions.
IMPLEMENTATION
What did you change or implement? <i>Outline a positive change, or changes, that have taken place as a result of being part of the Maths Champions programme. How did you plan for it and what did you do? How did you plan to assess the benefit of the change on staff practice and children’s experiences?</i>

I loved the idea of the maths number song spoons so I ordered lots of boxes of spoons from Amazon and in the summer holidays I drew lots of different sets of number rhymes on them from 5 little speckled frogs to 5 little men in a flying saucer to 5 little ducks and so many more! I have uploaded pictures of these number rhyme song spoons as they have been so successful and Ofsted loved them when I showed the inspectors what they were in our Maths meeting.

I created a folder for each classroom with lesson plan activity ideas they could use and printed out the glossary of key words from the resources section so that the team leaders could use them in their planning sessions. I shared them at a senior leadership meeting and explained how staff could use them and they then took them away and have been using them in their weekly planning sessions. This has also been really successful so I have made a folder on our shared teacher drive with even more ideas and so that it's easier for the teachers and team leaders to copy the information they need from the lesson plans and they can add in their own lesson plan ideas that they have used as well.

We have got labels on our baskets and resources for toys but I liked the idea of using the numerals and Numicon pieces to also demonstrate how many of each item needed to go in the basket as well so we re – made the labels in Apple Tree classroom and have found this has been a really useful addition to our tidy up sessions. The children have been much more purposeful and accurate in putting toys away in the correct boxes.

We implemented creating Maths Memos to give parents activity ideas that they could do with their children at home that linked in with the Maths learning we focused on at nursery each link so home and nursery partnership links were really strong. We provided a range of activity ideas that were easy to do at home and that didn't require any special resources or for parents to go out and buy anything which again made them much more manageable for parents to complete at home.

When the deputy and I completed our learning environment audit surveys we fed back to the teams about what we liked about their maths provision in the room and we then made a few suggestions about what they could add to enhance their maths opportunities in the room even further. Each room then ended up with an interactive number line and the children have loved moving the numbers on the pegs around and the team leaders have continued to spark the children's interest with this opportunity by changing the types of numbers depending on which focus story we have been looking at every 3 weeks.

We also decided that the outdoor environment needed some attention and our deputy decided to gather resources from Facebook marketplace and re-design the construction area which turned out beautifully and the children have been so engaged there.

IMPACT

The success and benefit of what you did:

For children

What has been the impact of the changes on children's learning and development? How has being involved in the programme made a difference for children in your nursery?

The children have thrived with their maths learning journeys this year. It has been wonderful seeing how far they have come from September to July with their maths skills of number, shape and measure. In particular we have noticed how creative the children have been with their use of shapes in their construction work in small scale play using transient art materials to create pictures and patterns to their large scale work where they have worked together to create obstacle courses for the other children to complete in the front garden. In particular we have noticed how children's counting skills have become more accurate throughout the year and how brilliant they have become with subitising – they are doing it all the time and in a range of contexts now! The children draw their faces onto 10 frames at group time which is great as the children talk about their feelings which is great for PSED

but it is also a great counting and subitising opportunity too as the children count how many friends are at group time and they always fill the 10 frame in different ways when they draw their faces.

The children have also learnt that Maths is purposeful across a whole range of opportunities – in the autumn term we did baking every Friday so the children had numerous opportunities to practise their measuring, weighing and counting skills. Our children also love to read so they have loved exploring reading new books that have had maths focuses within them whether they have been explicit or subtle. When we did planting and gardening as a focus the children used lots of language of comparison about the heights of plants that we grew as a class together.

For families

What has been the impact of the changes on families? How has being involved in the programme made a difference for families whose children attend your nursery?

The parents and carers have been really responsive to the maths memos that have been published on our online training portal. We have seen lots of likes on the memos that we have created and sent out online and parent engagement on Tapestry has been much higher as a result.

Some of the families have even tried some of the activities we suggested at home and put up observations on the learning portal to show us what they did with their children which was amazing and encouraging to see.

Next year I'm not classroom based and management want me focussing wholly on my curriculum lead role so I am hoping to take the learning from the Maths Champions course further. I would like to provide workshops for our parents and carers so they can see how to implement maths concepts into their everyday routines with their children and encourage them that they're already doing lots of teaching maths to their children without knowing it!

Quotes from parents on Tapestry

On Saturday afternoon we wanted a fun arts and crafts activity and we remembered we had shared the Playdoh recipe before Christmas. We followed the instructions, measured the ingredients out and even gave mummy a modelling lesson. We made different shapes and even a family of Playdoh people just like ours.

We learnt how to play the dice game using a ten frame. We didn't have any counters so used cheese shapes so an equally tasty game too!

A parent shared that their child's sunflower is growing everyday and it's now as big as his head and has 4 leaves



For staff

How has being involved in the programme made a difference to your staff team/individual practitioners? What has been the impact on their practice?

The colleagues in my room have talked to me about how much they have learnt from watching me teach new maths concepts in group times as well as during choosing time and have said it's helped them in their practise. They have then led teaching these maths concepts and lesson plans within their own group times and the feedback that they have written on their evaluations on the planning has been really encouraging to read as well.

The 2 year old team leader told me how helpful the maths planning folder was I made her. She commented on how great the maths activities were for the two year olds were and said how helpful, encouraging and reassuring it was that there are so many maths concepts covered in simple teaching activities eg snack time, using spoons in number songs with children etc and how this has helped her with planning other maths intents for group times as well.

One of my colleagues has been a huge success story from the maths champions course – she was really keen to get involved and one I started showing her how to do the maths memos she took this challenge on for her CPD target for a term and it was a big success. She then asked me for another task so I delegated the maths loose parts trolley to her and she loved taking it on as her project. When she researched ideas and made a booklet of activities the

loose parts could be used for she told me “I had no idea we could use loose parts like this and it covered Maths! I never thought of making a map with them but I thought it was such a good idea!”

Staff in general have become a lot more confident which was really reflected in the staff confidence audit surveys that were completed. We saw how confidence improved by the end of the year compared to where they were initially with their confidence teaching Maths in September. We have seen lots of lovely maths discussions taking place and maths has been reflected in lots of the activities that staff have engaged children with. Some of our more confident staff members have been keen to share their expertise and the activities and planning ideas they have used with the less confident staff members as well which has been lovely to see.

For the Maths Champion and Deputy Maths Champion

How has the programme helped you as Maths Champion and Deputy Maths Champion to develop your own practice? What has been the impact on your practice?

Participating in this course has massively helped me to develop my confidence with teaching Maths and providing more enriched, meaningful and purposeful maths teaching for the children in my class. I have learnt so much information and researched so many new ideas that at times it has been hard to know what to focus on and pursue as I’ve wanted to have a go trying so many of the maths concepts that I’ve learnt about! It has been really helpful pin pointing our strengths as a nursery and identifying the areas that we have needed to focus on improving to make our planning and delivery of maths teaching even better than it already is. It will be helpful to revisit the content we have researched for the course in a month or two’s time and decide which other elements we would also like to implement next year which we haven’t already looked at introducing. I have found the course especially challenged my teaching in terms of the problem solving, language and questioning I was using with the children which I further want to strengthen and help my colleagues with as I think this is a tricky aspect to get your head around but is so beneficial to children’s development of their maths reasoning and problem solving skills.

The deputy has found it helpful completing the maths champions course alongside her teaching course as she has found that aspects of tracking the children’s progress in maths have gone hand in hand with the progression of children’s maths learning she has needed to track in her general course.

For the setting

What has been the impact on your environment?

The setting has benefited massively from taking part in the Maths Champions course. The classrooms across the nursery are exhibiting lots of lovely maths resources and elements around the classrooms and in the provision – there are more maths and recipe books out and about in the different areas of the classrooms and each room now has a moveable number line that the children can interact with and re – arrange. I ordered some new maths resources including a Molky set (numbers on stilts) that went on my Maths shelf – they have been so popular that two more of my colleagues are ordering them for their rooms!

The deputy re-designed the outdoor construction area with new lose parts including bike tyres and pipes and the children have loved making their own wonderful structures, buildings and completed some lovely imaginary play with these resources. She also re-vamped the outdoor sand shelf area with new resources and labelled trays with Numicon pieces and numerals so the children could correctly count the resources back into the boxes and trays which has also been a success.

We have re-labelled all of the trays and baskets in our classroom with Numicon pieces and numerals on the label to create a number rich environment for the children to count and organise the toys and items back into their correct homes which has paved the way for the other rooms to follow suit.

We had our Ofsted inspection in May 2024 and the inspectors were really keen to hear all about the Maths Champions course and what we had implemented following on from participating in this project. I had a meeting with one of the inspectors and we talked for a whole hour about the maths provision at our nursery! She asked me how our teaching of maths will support our children in 10 -20 years time. She also asked me how we adapted our maths teaching to meet the needs of all the children and she asked me about our maths planning and curriculum

which we looked at in detail. She then asked me all about the Maths Champions programme – about what we had to do for it and what we had implemented in the nursery as a result. I then took one of the Ofsted inspectors around the nursery for a maths environment learning walk and I pointed out all of the maths concepts that we were teaching within the room and our daily routines. She also loved the maths song spoons I had created for the number nursery rhymes and she loved the molky numbers on my maths shelf too, commenting “they’re so tactile, no wonder they’re so appealing to the children. They’re brilliant!”

We also had some lovely feedback that explicitly reflected our maths provision in the Ofsted report that came out: ‘Children love learning and achieve exceptionally well. Many demonstrate remarkable focus and sustained concentration because they are absorbed by what they do. They are proud of their achievements. For instance, one child proudly exclaimed, ‘This is the biggest number I have ever thought of!’, while completing a number activity, while another quietly explained how he had made a caterpillar for his daddy.’

Next steps

What further improvements might you make and how will you continue to monitor the quality of maths opportunities within the setting?

As mentioned earlier, rather than being a teacher in the classroom next year I am moving on to a new stage of my career focussing solely on the curriculum lead aspect of my role so there will be lots of opportunities to enhance the maths provision further at nursery for the children, staff and parents. This could mean that I take back publishing Maths memos on a weekly basis and hosting some maths workshops for parents and carers throughout the year.

I will be mentoring the staff across the nursery on a more frequent basis as well as completing HELO visits to each of the rooms to observe teaching and learning so Maths can be one of the focuses I look at in detail during these lesson observations. I will see how we can celebrate staff’s successes and how we can support them with aspects they find more difficult to teach.

I would like to expand on the physical and online folders I have made for staff to help them with their maths planning and teaching. My vision is that my colleagues can add their Maths teaching concepts to the folders I have made for measure, number and shape. This way everyone can share and use each other’s great maths teaching lessons and concepts for an even more rich and varied Maths provision at nursery as I have seen some great ideas being used and taught across the rooms so it would be lovely to make our maths planning bank even bigger!

My colleague and I worked together to make a maths loose parts trolley to be used both in the classroom and in the playground but we are yet to introduce it to the nursery so this is another goal I have for next year. We will introduce the resources and booklet on an INSET day and then slowly introduce using the resources from the trolley in the room before we use it on a wider scale in the garden as well.