

Maths Champions Case Study

Champion: Nicky Sanford

Setting: Marcham Pre-school

INTENT
Introduction <i>A little bit about your setting, why you joined the programme and what you wanted to achieve from it.</i>
I completed Early Years Teacher training in 2016 and had subsequently been looking for a new challenge to extend my practice and meet my passion in learning new things. The Maths Champion project ignited my interest in being involved in something new which I could also involve other staff in. Our setting takes children from age 2 until they start school, and we are open 9am-3pm, term time only. The team and I were already aware that our provision for maths could have been better, and that staff needed more training and understanding in how to offer engaging and appropriate activities to support the children's maths understanding, particularly in relation to shape. Staff were relying too much on adult-led activities, board games and 'counters' rather than hands-on, natural resources or problem-solving opportunities. The Maths Champions programme appeared an excellent opportunity to change the setting in a way that would have an ongoing impact on staff professional development as well as the outcomes for children now and well into the future. I discussed the opportunity to be Deputy Maths Champion with our youngest practitioner but one who is also passionate about change and who was keen to share her learning with other practitioners.
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>
The online training was completed by both me and the Deputy Maths Champion (one other member of staff also accessed the training alongside me). It felt important to gain the knowledge first-hand as this would have the greatest impact and enable information to be more clearly passed onto the rest of the team. There were many 'wow' moments within the training and some phrases which really stuck out - "number system is man-made and therefore learning has to be man-made", which really made the team think about the level of modelling we were providing and how we needed to talk about and show numbers and numerals much more than just asking questions about what children already know. The courses inspired us to think deeply about the range of maths activities we were providing and whether we were assessing the children's deeper understanding well enough. It was evident that staff were focussing more on what the children could show in terms of recognising numerals, naming shapes, and counting out 1:1, and involved less assessment of sustained shared thinking and problem solving. The audits highlighted a number of things. It was very clear that the environment was not as 'maths' heavy as we had previously thought it to be. Many of the resources needed to be accessed by an adult and were not freely accessible within the different areas of the classroom and outside area. We immediately set to work adding scales, clocks, calendars, numbers, posters, etc. to the home corner and tape measures, shape words and photographs to the construction area. All the staff were involved and came up with ideas of what else we could provide. The staff confidence audit was not so surprising, however it gave us an ideal opportunity to discuss professional development needs with those staff that felt less confident about the problem solving and questioning skills to support maths. This was what we might have expected from these staff and would be focussing on building their confidence and awareness of their abilities. The core activities were printed out and shared with all the staff members so they could easily prepare and access them when the opportunity arose.

IMPLEMENTATION

What did you change or implement?

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?

For many years, we have had a giant abacus frame in the classroom. It has rarely been used for any focussed reason but has always been considered a valuable resource to keep. Taking part in the Maths Champion programme prompted staff to use it on a daily basis to involve the children in Registration and to make maths a more central part of this routine. As a team, we discussed ways that the children could be involved in the 'admin' of the morning when we check that each child has brought in their water bottle and that staff know how many children are in each colour Key Group. We made a big change to our routine and instead of the children answering the register with 'good morning'. they began to answer with 'good morning, GREEN group' when another child would move a green bead on the abacus. Once all the children have answered their name, the group examine the results and the children have the opportunity to count how many are in each group, which group has the most, the least or if any are the same. This is then compared to the water bottle stored on each coloured mat. This has had an amazing result as many children are now able to talk about the addition and subtraction needed to make groups equal. Having done this for a few weeks, all the staff became confident about asking the same sort of questions when the chance arose in other practical situations, and this was observed and noted by myself and the Deputy Maths Champion.

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?

As we are based on a school site, we have a good relationship with the Reception Class teacher, and we have shared the children's progress and achievements with them - she is excited about them joining her class in September and is astounded by the level of their deep understanding of maths. Parents have also commented on the progress that their child has made. Because of the staff excitement at being involved and interested in Maths games of all sorts, the children have picked up on this and been even more excited! The children are far more confident about giving answers, and in having a go. They talk to each other and use new vocabulary as they explore the resources. There is an element of competitiveness as to who is going to work out challenges and give the answer. Their involvement in construction activities has shown a big change, as we have made this area twice the size that it was. This has meant that it is more comfortable for staff to engage in that area, and children build, talk, add resources, and continue for days at a time.

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?

Parents have commented that their children are sharing their maths learning with them more at home. Involvement in the programme has supported staff to have the confidence to share activities with parents and to encourage parents to try them out for themselves. As staff have provided more detailed feedback to parents on the discussions and activities that have taken place at pre-school, and the benefits to learning that have taken place, this has taught the parents too. As part of our involvement, we have 'gifted' each child involved in the programme with their own pack of resources... buttons, tape measure, timer, books, activity pack and we hope that they will continue to explore maths at home through the use of these resources.

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?

Staff feel that they have improved their practice and their belief in themselves in how to teach maths and support the children. Being involved in the programme has meant that staff have not been able to 'hide' away from supporting maths and have confronted their own 'fears' about their competency. This has led to a wonderful discovery that we are all able to support the children and be involved in their maths journey in creative ways. One long-standing staff members admitted to feeling a bit stale in their approach to maths and the programme has led to them showing more creativity and explorations into using loose parts (and even additional training opportunities). Our newest team member felt that she was 'rubbish' at maths and throughout the programme I have worked with her to show that she has the skills to support the children and by changing her personal attitude she has become more confident in speaking to the children about maths.

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?

Being involved in the Maths Champion Programme has been amazing for both me and the Deputy Maths Champion. It has inspired us to find opportunities for maths where we would not previously have found it. We found the Resources section really helpful in finding new and exciting idea to add to our repertoire of knowledge and games, it was so useful to know that these were so readily available and in an easy format to explain the maths concepts that were being covered. One of the nicest things was having the opportunity to share our ideas, passion and excitement with other like-minded practitioners!

For the setting

What has been the impact on your environment?

Maths has taken on a much bigger focus within the setting yet is planned for far less than it was previously. Resources are now more on hand for children to access and they know how to use them to enhance their play. Language and problem solving is definitely heard at a higher and more advance level than we have seen in previous years (and given the effects of COVID, this makes it even more remarkable). Tidy up time, is no more... the children are asked to 'stock check' instead and in doing so, make the room clear, search for any missing resources and take pride in the environment and resources. Snack time has evolved into a learning opportunity and not just a quick break from learning to eat a piece of fruit... this is something I have been striving for a long time, and so I'm delighted that it's been achieved through our involvement with Maths Champion.

Next steps

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

I have reflected on this with the Deputy Maths Champion, and we have agreed that it is important that we keep the interest and enthusiasm for maths learning and teaching and that it doesn't become repetitive and uninteresting as we move into a new cohort. We plan to explore the remaining activities in the resources section and prepare a file of our suggested favourites and continue to carry out regular audits of both the environment and of staff confidence and practices.

Thanks you for taking part in the Maths Champions programme.