The London North East Maths Hub Shanghai Exchange 2019/20

In November 2019 we had 2 specialists from the London North East Maths Hub. Rob Sear and Becky Dokmanovic detail an account of their recent visit -
"Summarising a two-week visit to observe Shanghai mathematics teachers is a difficult task, and it is impossible to mention everything that we saw. However, here are some of the key features and ways in which it has had an impact on our practice.

One of the features that stood out the most was the children's fluency in number facts. From Grade 1 to Grade 5, pupils had developed a secure understanding of the number facts appropriate to their age, through high-quality teaching and use of key representations. It is clear that pupils have been trained to spot patterns and connections within these number facts, as opposed to simply learning them by rote. When presented with challenging calculations, the older pupils were able to identify efficient ways of solving – because they were thinking flexibly and making connections between many areas of their understanding.

All lessons featured the small steps that formed part of a coherent journey. Pupils were guided towards generalisations – for instance, in a division lesson, pupils were guided to see that the remainder is always smaller than the divisor. Pupils were actively involved in the learning and in seeking pattern and meaning in what they were doing.

It was also fascinating to see lessons on different areas within maths that were not just number-focused, and how this teaching for depth of understanding pervades the subject. For instance, one lesson saw children learning the properties of a cuboid. This began, astonishingly, with a potato! Parts of the vegetable were gradually cut off, exposing a face, an edge and finally an apex. Such creative planning and teaching ensured that pupils were engaged in the learning as active participants, and exposed to mathematical concepts in a meaningful way.

Real-life examples were used as a core method to reinforce the concepts. When creating bar charts, pupils used information from a charity sale that had taken place earlier that month, and used the information to plan for the next event. A PE game was used to elicit the essential features of a circle. The school gates were used to illustrate the unstable structure of a parallelogram.

The structure of the teacher research groups in the schools visited emphasised the value that professional development plays. On a monthly basis, the entire maths team observe a lesson together and spend a significant amount of time unpicking the key elements and suggestions for improvement. The level of detail and analysis, with a strong focus on the mathematics and not the teacher, explained why lessons taught in these schools are pretty much, in their own words, perfect!

On a personal note, the hospitality we received from our Chinese hosts was overwhelming (and we did see many other aspects of school life, not just maths!). The two weeks were an unforgettable experience, and have already had an impact on our own practice as well as allowing us to share with our colleagues in our own schools and indeed in our Work Group. It is a shame that we cannot return the favour by delivering the second leg of the exchange. However, we hope that it will continue in the future and provide many more rich learning opportunities for teachers across the country."