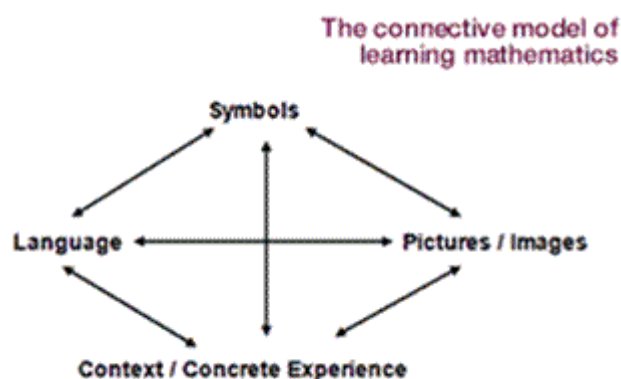


In what way were you planning to strengthen links in Mathematics?

For the project I wanted to ensure children were experiencing real life contextual examples, which would develop a depth and conceptual understanding for all of the children.

I aimed to incorporate Haylock and Cockburn's connective learning model to improve children's fluency and strengthen links within their mathematics. Particularly with the new emphasis on fluency in the Mathematics curriculum.

I aimed to use the model to strengthen children's representations in their early maths learning.



Why did you choose this area?

I chose this area because I wanted to ensure gaps were not developing at an early age, therefore leaving children without the conceptual understanding they need for learning mathematics.

Referring to prior research I have undertaken in early years mathematics, children need to have a firm basis of number sense and counting before they can learn further concepts.

Sometimes children are moved on too quickly to end of year expectations without having secure prior knowledge.

My aim was for all of the children to have a deep understanding in number to provide a base to build upon as they continue their maths learning.

What did your project involve?

The project involved working in the early year's team to ensure we were incorporating a connective approach to our teaching and planning.

It also included making maths real life and making those links with everyday use. As part of our planning we now incorporate the connective areas to give children the opportunity to experience: models and images, maths vocabulary, symbols and context (concrete experiences).

Other members of staff also reviewed their planning to ensure they were including the connective areas.

The environment was also adapted to incorporate the practice and apply elements of the contextual learning. This allowed children the opportunity to practice their skills they were taught and also explore and make those links for themselves. The activities and resources incorporated the learning of number recognition, counting and number ordering. All which provided building blocks to develop children's learning about relationships with number.

We made a real life maths board where we had numbers from around the environments to show children numbers are all around them (see photos attached).



What did you find out throughout carrying out your project?

During the project it was found that children who were secure in their number recognition (the cardinal principle) had fewer gaps. These pupils were able to display numbers through a selection of representations such as using their fingers, writing the numbers, pointing on a number square, showing them on a number fan and counting out that amount of objects.

When children were exposed to a range of connections linked to the connective model they were able to understand concepts faster.

They could also make links in their learning and use known number facts to tackle challenges. This is most likely due to the range of representations and opportunities for children to explore.

Working in small groups with children through carefully planned activities helped to close some of the gaps in the children's learning. This gave children the chance to talk with others and be exposed to discussions including maths vocabulary.

This impact was reflected in the data which rose by 15% after the connective models and interventions were introduced.

What differences did it make to your learners?

Many gaps that were forming narrowed.

Children had a better idea of number sense and a recognition of the value of maths learning from the real life context.

Children were identifying a purpose to their learning.

Children were quickly able to move from the concrete to the abstract when they had experience of a multitude of representations in their taught lessons. For example, when children were learning about addition they were able to say how many altogether, and then link this to the number line where they could use this to add numbers. They could see the objects on the number line and identify methods for themselves to understand the concept.

What difference did it make to your school?

Children across the year group could access the activities and number games.

Staff took on the planning approach and ensured they were using the Haylock and Cockburn model within their planning.

Maths vocabulary is displayed on our working walls, which links our current learning to images, vocabulary, practical resources and symbols.

Children were using their working walls during lessons to look at the standard for success and it was used as a talking point to refer to prior learning.

Staff were more aware of the need to give children a multitude of representations when grasping concepts and the journey from the abstract to the concrete.

Teaching changed to ensure depth of the number system ensuring all children had this knowledge.

What did you learn yourself?

Participating in the work group gave myself the opportunity to develop my practice in many ways. Sharing ideas, resources and apps was beneficial and made me evaluate my own practice and incorporate strengths of others into my own teaching.

Sharing the resources was particularly helpful to enhance making maths real life and bringing it into context for the children.

It was useful to read some of the articles that were recommended to the group such as those on Mastery Maths and to share our understanding of this. It was useful to have a light hearted debate to analyse Mastery Maths further.

I really enjoyed being able to meet and network with other keen maths teachers and share good practice. It was beneficial to visit other schools and look around.

An understanding of Haylock and Cockburn's connective model was useful and it was interesting to identify how schools have ensured this is part of their maths lessons, either by planning, working walls or lesson observations.

All around this was a beneficial course both for myself as a practitioner, my children in my class and my team who I have shared good practice and worked closely with.

Any other comments

Thank you Maths Hub for an enlightening project. I really hope there will be the opportunity to have another one soon!

Charlotte McNeaney