

## Dialogic Teaching and the Numicon Approach

Numicon Kit 3 (publishing autumn 2011) emphasises mathematical conversation and promotes a dialogic style of teaching as a key part of the Numicon approach. Suggestions and ideas for encouraging dynamic whole-class mathematical conversations will be given throughout the Kit 3 Teacher's Guide and Activity Handbook. Among the many benefits of dialogic teaching, allowing children to reflect on themes together as a class is one that is intrinsic to the Numicon approach. This is because it is often in these situations that some of the most thought provoking questions and answers arise. With this in mind, Numicon author Romey Tacon has put together this useful guide to dialogic teaching and the Numicon approach.



The term 'dialogic teaching' is becoming widely used, but what is it and what does it involve? In an article for the TES (<http://www.tes.co.uk/article.aspx?storycode=389939>) Sir Robin Alexander warned that "Dialogic teaching is about more than just applying tips such as 'less hands-up bidding' It demands changes - in the handling of classroom space and time; in the balance of talk, reading and writing; in the relationship between speaker and listener; and in the content and dynamics of talk itself".

Dialogue (or conversation, as we at Numicon tend to call it) alongside action with structured imagery is fundamental to the Numicon approach. This is entirely consistent with the principles of dialogic teaching. The Numicon Teaching Programme is designed to help teachers plan purposefully to cumulatively build children's understanding. Numicon Activities are designed for children to work on together in whole class and group or paired work with occasional independent practice. When children are working together practically with Numicon they naturally share and try out ideas, adjusting them simply by moving the Shapes or Rods. You'll find lots of suggestions in the Activity Groups for paired work and games.

When children first begin to engage in dialogue about maths they use their own natural language. As they become familiar with mathematical language in conversations with teachers and peers, they move towards using conventional mathematical language themselves. Of course language is only part of the picture; the mathematically rich environment and action with Numicon Shapes and Cuisenaire Rods provide both a meaningful context for the dialogue and different

channels for communicating that support children's understanding of what teachers are saying. As Joe (age 8) said, 'When the maths gets hard and you don't really know what your teacher is saying they can show you with the Numicon and that really, really helps me!' Conversation and imagery together help children to reflect on their thinking, to explore and to form new understanding

Dialogue also supports assessment for learning. We all know that it is not uncommon for a child to complete a worksheet of algorithms correctly by following a rote procedure – and that this cannot be taken as evidence of understanding. It is what children **do and say** that provides the only reliable evidence of where they are in their learning. What children **do** includes how they use apparatus and their own recording. Numicon Shapes and other structured apparatus such as Cuisenaire Rods support dialogic teaching because they provide a way for the teacher to see how a child is thinking and therefore ask appropriate questions to help develop a child's understanding.

It may take time for children (and teachers!) to get used to working in this way and to establish a culture of respect for each other's ideas, especially if they have been used to working individually on worksheets without much talking. However the benefits of adopting a dialogic approach to teaching are manifest. The children know that their ideas are respected and valued when adults and children listen to one another, suggest changes and help each other. They also learn that when something is difficult they have the chance to learn something new, and that they will have a great sense of achievement when they have persisted to find together a way through the difficulty.

## 5 principals of dialogic teaching <sup>(1)</sup>

1. **Collective:** teachers and children address learning tasks together, whether as a group or as a class, rather than in isolation.
2. **Reciprocal:** teachers and children listen to each other, share idea and consider alternative viewpoints.
3. **Supportive:** children articulate their ideas freely, without fear of embarrassment over 'wrong' answers; and they help each other to reach common understandings.
4. **Cumulative:** teachers and children build on their own and each other's ideas and chain them into coherent lines of thinking and enquiry.
5. **Purposeful:** teachers plan and facilitate dialogic teaching with particular educational goals in view.

<sup>(1)</sup> Robin Alexander Towards Dialogic Teaching: rethinking classroom talk (2004, 4th edition 2008)

You can find out more about the Numicon approach in the Numicon Teaching Guides which are available either separately or as part of in the Numicon Kits.

**1st Steps with Numicon in the Nursery Teaching Guide**  
ISBN 9780955394997

**Numicon Firm Foundations Kit Teaching Guide**  
ISBN 9780198487661

**Numicon Kit 1 Teaching Guide**  
ISBN 9780953808335

**Numicon Kit 2 Teaching Guide**  
ISBN 9780198487678

**Closing the Gap with Numicon Teaching Guide**  
ISBN 9780955394973