



Numicon—Tonbridge Networked Learning Groups

CASE STUDY

As part of the Tonbridge Networked Learning Groups activities to make mathematics learning more meaningful for pupils, schools have been undertaking a number of workshops with a focus upon emphasising visual learning. These have involved revisiting the Strategy “Models and Images” materials and looking at the practical use of numberlines.

*“A multi-sensory
approach
to
Arithmetic”*

CASE STUDY

This year schools were introduced to the use of Numicon materials as a way of developing pupil's conceptual understanding of number without moving into formal recording at too early a stage. All these sessions were funded from the Primary Network Learning Group funding, supported by Primary Strategy and BEAM Maths Consultants with an emphasis upon encouraging schools to share their most effective practice through discussions and visits.

Numicon is designed as a multi-sensory approach to arithmetic teaching for children aged 3-7 and older pupils with special needs. Numicon uses patterns to represent each numeral; the patterns are structured to encourage the understanding of number and number relationships, essential for successful arithmetic.

The Numicon small-step teaching programme is research based and written by practising teachers. Teachers have found it is easy to use, whilst pupils have been highly motivated by Numicon and quickly develop positive attitudes to maths. The initial workshops were divided into two sessions, introduced teachers to Numicon materials and allowed them time to become familiar with how the materials can be used in Foundation Stage and Key Stage 1 classes and to support older pupils with SEN. Numicon's imagery uses patterns to represent each numeral; the patterns are structured so number relations can be seen in a way not provided by

written numerals. Participants also learnt how Numicon can be used to encourage an understanding of numbers and number relationships to support successful mental and written arithmetic.

Session Two was designed for teachers who were familiar with Numicon materials and have used them before. Participants from Session One were encouraged to stay for the afternoon and have a further look at the use of the Numicon small step teaching programme and software for interactive whiteboards. Schools were given the software and some Numicon materials to take away and use. A further session showed how Numicon can be used to support the use of "Wave 3" intervention strategies. A workshop on the Wave 3 materials had been held earlier in the year for Teaching Assistants in the Cluster.

A follow up session will be held in the new school year when schools will be able to return and discuss the impact of these materials and their suggested use.

Additionally, the Early Years Advisory Teacher has introduced Numicon to a setting to receive feedback on its use. In the Pre-School the Numicon equipment has been introduced gradually to the children during child initiated activities with staff modelling the early stages of its use. It is not used in adult directed activities with specific teaching. The children are then able to access the materials in the maths area to support their learning

during play. The idea being that when they meet the equipment at school it is a familiar item and they are already aware of some of its properties.

Initial feedback indicates that pupils are inquisitive about the Numicon and beginning to ask questions and identify them with the numbers helping them develop a concept of what for instance a three or a six is.

Review with teachers who have used Numicon since the sessions has been very positive. At Woodlands Junior School Numicon has been used to support pupils with an identified poor understanding of number and to whom mathematics has remained 'bit of a mystery'. Numicon has helped their understanding of number and in particular the conservation of number. The visual nature of the materials has helped them to understand different ways of making a number like twelve by overlaying Numicon pieces to make different patterns of twelve. It has also helped them to see and understand the concept of odd and even.

Using the stacking towers they are understanding tables far better. Numicon demonstrates in a concrete and visual way how, for instance, $4 \times 6 = 24$. They can see that four lots of a six piece of Numicon makes twenty four.

<http://www.numicon.com/home.aspx>

Both in Pre School settings with young learners and in schools with pupils who have found numbers difficult, Numicon is helping learners to visualise and understand numbers in a way which teachers and practitioners feel will have a long term benefit for their mathematical learning.