

Creating a Numicon mathematics learning environment

Written and developed by

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Numicon classrooms that are rich in visual images for number and mathematics to support, celebrate and enhance children's learning also convey to anyone entering the room (children, parents, visitors, staff) that mathematics is highly valued as a core part of the curriculum.

There are several elements to creating an effective mathematics learning environment and it is recommended that, wherever possible, classrooms have:

- a designated mathematics area where resources are stored
- a wall display
- an interactive display.

All displays should be high quality, well-presented and aesthetically pleasing. They can serve many functions, including arousing curiosity, informing, stimulating enquiry, encouraging participation with hands-on interaction, acting as a celebration of children's work and enhancing quality by setting high standards.

Multi-purpose displays hold children's attention over a longer period than those which are purely celebratory or informative. The following suggestions are designed to help you plan for an effective mathematical learning environment in your classroom. You will also find references to resources that can be downloaded and printed.

Plan to set a few minutes aside from time to time to focus on a display and encourage children to pay attention to it. Occasionally, in group-work sessions of the mathematics lesson, allocate children to work on the interactive display activities.



Setting up a designated mathematics area

This area will provide a focal point in the classroom for mathematics. It is helpful to have a display board above a horizontal surface, under which maths equipment can be stored, organized systematically in clearly labelled, numbered trays so children can easily find and put away equipment they need.

Equipment for counting (e.g. cubes, buttons, bottle tops and counters) stored in transparent plastic containers can be an attractive and colourful feature of the maths area.

Measuring sticks, compasses, and other mathematics equipment can be stored upright in labelled pots.

Presenting materials like this helps to create an ordered workshop atmosphere and gives children opportunities to organize themselves and take responsibility for their own learning.



Using numbers in the classroom

Children will see that numbers are useful and important when the labelling and signs around the classroom show them being used purposefully. For example, storage trays and children's coat pegs can be numbered as well as labelled.

Storage pots for items such as pencils, brushes, scissors and crayons can also be labelled with the number of items they contain.

Signs can be used to show how many children may work at a time on a given activity.

It is also helpful to use numbers in everyday situations. This can be done by referring to calendars, clocks, timetables, numbered lists, and so on.

Use the accompanying Numicon classroom environment templates to create:

- drawer labels
- cloakroom peg labels
- Numicon Shapes for placing round the class clock face
- labels to show how many children can work on an activity
- a self-registration frame.



Wall displays

Number lines are a vital permanent feature to support children's learning. These are provided in the Numicon Starter Apparatus Packs and should be displayed within children's reach wherever possible.

A Numicon 0–1001 Number Line is available in Numicon Starter Apparatus Pack B and is a valuable addition to the mathematics environment. It is recommended that this resource is displayed along a corridor or in the school hall when there is insufficient space in the classroom.

The wall display in the mathematics area can be zoned to provide supporting information relating to children's current work on the various strands of the maths curriculum (Numbers and the Number System, Pattern and Algebra, Calculating, Geometry, Measurement). Some of these areas may need to feature permanently while others will be changed from time to time, e.g. if children are working on a particular aspect of measures, or are collecting data for a class project.

These areas can include examples of children's work. Regularly including examples of their work helps to give children a sense of satisfaction. Be sure to show examples of high-quality work.

Including children's work alongside illustrations, photographs, books and natural and man-made objects helps to create interesting and aesthetically pleasing displays that provide stimuli for discussion.

Displays should be labelled and can include questions that challenge children to investigate.



Interactive displays

Interactive displays can be set up on a horizontal surface below the wall display in the mathematics area, with activities planned to reinforce the current teaching focus or to investigate a challenge.

Interactive displays give children important opportunities to handle, explore, investigate, question, try out their ideas and practise, all of which helps them to develop fluency with what they have been learning.

Hints on setting up displays

The following information may be of use in choosing what to feature as displays in the mathematics area.

- Plan the display to coincide with the children's current learning.
- Make it interesting, exciting and visually attractive by using a mix of 2D and 3D images.
- Have displays within children's reach along a table or shelf, as well as on the wall.
- Remember that quite simple displays can look more attractive if different levels are created using empty boxes covered with fabric or paper.

- Encourage children to contribute to the display and bring in objects.
- Include children's work in displays and, where possible, involve the children in setting them up.
- Encourage children to take pride in keeping the display tidy and ensure that it is kept clean and free from clutter.
- Refresh the display to sustain interest by adding new items and removing those which have served their purpose by changing some parts of it.

Resources

Several suggestions for creating mathematically-rich learning environments and interactive displays have been produced to accompany the Numicon 1–4 activity groups.

These suggestions make clear reference to connected activity groups from the Teaching Resource Handbooks.

There are also downloadable resources for labels, questions and resources which can be printed out and used to make Numicon a prominent feature of your designated mathematics areas.