

Pupils' skills as learners

Although pupils are acquiring mathematical knowledge and skills at a reasonable rate, their skills as learners are not sufficiently well developed.

In particular, pupils are often unaware of the standard at which they are currently working and what is required to achieve higher levels. They are not able to reflect on their relative strengths and weaknesses in mathematics and know little about what they need to do to improve in the subject. In an attempt to address these issues, some schools have adopted a range of strategies, as in these examples from the Ofsted subject report 2002/3:

On the school intranet, the mathematics staff developed part of the site for pupils in Years 7 and 8. It included revision notes and practice material for each of the major topics. Following the half-term assessments, pupils were helped to identify aspects of mathematics about which they were still not confident and directed to use the related materials on the intranet. Many pupils did so during lunchtimes or in the homework club sessions. Some pupils emailed work to their homes for completion in their own time.

In a Year 8 class, the pupils knew they were working on National Curriculum level 5 material, for the most part, and had detailed descriptions of mathematics at level 5 in the back of their exercise books.

The school library contained a range of mathematics books and multimedia materials. For some units of work, pupils were set the task of researching some aspects ahead of studying them in lessons. For example, Year 9 pupils were asked to find out about Pythagoras and his theorem.

At the start of each term, all groups in Year 10 were provided with a detailed outline of the term's work in mathematics. It included samples of examination questions that they ought to be able to complete when they had mastered the work.

National Curriculum attainment targets and level descriptions for Key Stage 3 were rewritten for pupils and displayed as posters in the mathematics corridor. For each level, a selection of 'model' test questions was attached to help pupils understand the characteristics of a complete and correct response. This display was changed as the Year 9 units of work changed.

More schools need to employ strategies such as these to enable pupils to be more effective learners, for example to:

- become more autonomous and independent learners
- develop research and enquiry skills
- decide where to apply effort in studying
- choose to spend additional time on particular aspects of mathematics
- consolidate their understanding and skills at their own pace and with others if they choose
- extend their learning where they are interested or think it is necessary
- take more responsibility for their own progress and achievement.

*Mathematics in secondary schools, Ofsted subject reports 2002/03;
HMI 1978; February 2004*