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[Review of the book Language and mathematics: A collection of articles . . .]

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1984-03
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http://hdl.handle.net/10539/17936
Groen, M. (1984, March). [Review of the book Language and mathematics: A collection of articles . . .]. Lengwitch: [The Journal for Language Across the Curriculum], pp. 26-29.

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NEWS & REVIEWS

'The role of language in the development of mathematical thinking' - A video-lecture by Nick James, of the Open University, delivered at the Johannesburg College of Education of Tuesday 28 February 1984.

During the course of his in-service training activities in Britain, Nick James came to recognise language as the key to mathematics learning. In his video-lecture at JCE he demonstrated to staff and students some of the many links between language and the learning of mathematics.

Language can be used both to form ideas and to communicate ideas. Children learning mathematics need to be given time and the right kinds of opportunities to talk their ideas out loud in their own way. This ensures that the mathematical terms which they come to use are meaningful to them and are not simply empty regurgitations of the teacher's language or the language of a text-book. Initially, talk should be linked to action and to the concrete experience of mathematical concepts. Touching is an important part of the process of thinking out loud. James's video of six-year-olds trying to master the concept 'more than' demonstrated very clearly the extent to which thinking is released through the use of equipment.

Games can be used to help children see that a wide range of terminology in mathematics is used to describe the same process. All of the following terms, for example, concern the process of subtraction: 'Difference between', 'more than', 'less than', 'take away'. One game might be to get children to see how many sentences they can make about this statement: 8 - 5 = 3 . Or if one didn't want to limit the game to subtraction one could simply ask the children to describe the possible relationships between 8, 5, and 3. The purpose of games of this sort is to increase the children's fluency in the use of mathematical language.

Writing down mathematical ideas, rather than simply talking about them, is another order of difficulty. The development from speaking and understanding to writing meaningfully in the standard notations of mathematics can be summed up as follows:

