Errors and Misconceptions in Maths at Key Stage 2

Working towards successful SATS

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Contents

Introduction: Error correction exercises

These introductory notes explain the rationale for using these exercises and report on the results of classroom trials of the approach. The notes explain the intentions of the exercises and provide insights into the potential of the approach. Anyone who would prefer to form their own opinion by working with the materials can go directly to a summary of recommendations for using the exercises provided on page 9.

How do the exercises work?

The children are given the completed work of an 'unknown child'. The work of the 'unknown child' has been created so that it demonstrates error patterns that can be linked to specific misconceptions, common errors and in some cases a simple lack of knowledge, which the analysis of the SATs suggests are widespread.

The children are asked to:

1. Mark the work and establish which examples are incorrect.
2. Suggest why the 'unknown child' might have made the errors.
3. Suggest ways in which they would help the child overcome the problems exhibited.

In trials the exercises have been used as part of children's preparation for SATs. In the teacher's notes that accompany each set of exercises there is a summary of the main points about common errors in the relevant mathematical theme taken from QCA Standards documents for 1999 and 2000.

While it will be the children working at levels 3 and 4 who will be most likely to be making errors similar to those provided in the examples, all children will gain from taking part in these exercises. The analysis of SATs suggests that children working at level 5 are not immune from making some of these errors. The evidence from the trials also suggested that while the higher mathematical attainers spotted errors without difficulty, the element of challenge was to consider how to explain a mathematical idea in a way that would help others. The value of these exercises resides in the belief that we consolidate and develop our understanding through the opportunity to explain our thinking.

What does this approach offer?

Trials were carried out with groups of Year 4, 5 and 6 children and it was found that the exercises provided children with opportunities to:

- Revise their own understanding of the mathematics covered – to identify the errors they must do the maths themselves.