

How do we teach multiplication facts? Implementing a precision teaching approach

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Introduction

May adults remember their teachers telling them how important it is to 'learn your tables'. Some children enjoy learning multiplication facts by rote. However, for the majority of children, this is onerous and therefore often difficult for teachers and parents to promote. Multiplication facts are easy to teach, but often difficult to *learn*. In the new National Curriculum for mathematics, there are many opportunities for teachers to encourage children to look for short-cuts and alternative methodologies to learning multiplication facts by rote. It is known that those teachers who connect different areas of mathematics are more effective at enhancing pupil progress (Askew et al, 1998). Teaching the multiplication facts strategically helps children to make connections and reduces the burden on their memory. In Early Years and Key Stage 1 settings, many children enjoy chanting or singing times tables. As they progress in their learning, following the National Curriculum, children learn 2x, 10x, 5x and the concepts of doubling and halving. Once they have moved onto the 3x and 4x tables, they can be reassured that, due to commutativity (supported by the mental images provided by arrays), they have covered aspects of the times tables that are often perceived to be more difficult.

Simple methods, like encouraging children to use the smallest number first (as opposed to the larger number in addition) can help enormously. The number of mental 'jumps' that a child has to make can be radically reduced. In addition, square numbers are taught at an earlier stage at Marlbrook - taking advantage of the striking visual images of the associated arrays - and act as further reference points when children are given a multiplication problem. Visual patterns can be also used to help children learn compensatory methods for the 9x table (multiply by 10 and subtract the number being multiplied).

While there is no easy way to learn the 7x and 8x tables, by employing the methods described above, the teacher can be assured that a child has the means to develop rapid recall of multiplication facts. However this is so often not the case. Frequently, children arrive in upper Key Stage 2 with very poor knowledge of multiplication facts. This may be partly due to multiplication not being a target for a cohort, or due to the reticence of some teachers to dedicate time for the teaching and learning of these facts within school time. Times tables are often viewed as the equivalent of spelling in Literacy, as a homework task, to be supported by parents. In these situations, there is often no alternative to learning multiplication by rote, a tedious and laborious task for any child. In this paper, we examine the efficacy of an established intervention technique, precision teaching, in developing children's times table knowledge.

What is precision teaching?