

Letter to Education Guardian – in response to article ‘Early years provision: playing with maths’, 19/01/2010: from Elizabeth Carruthers and Maulfry Worthington, researchers in early childhood mathematics and founders of the *Children’s Mathematics Network*.

‘Much more than ‘squiggles and scribbles’

In response to the article ‘Early years provision: playing with maths’, it was our research into *children’s mathematical graphics* that the ‘Williams Maths Review’ featured. The report acknowledges the strength of our findings in supporting children’s understanding of the symbolic written language of mathematics. It includes our taxonomy which traces the trajectory of children’s mathematical thinking from birth to 8 years, from their earliest marks to calculations with larger numbers. This is first time that this development has been analysed and charted.

However, we are extremely concerned that reference is made to children’s examples as ‘squiggles and scribbles’, a sadly derogatory and dismissive comment on young children’s understanding. Unfortunately such comments are only likely to confuse practitioners.

Children’s mathematical graphics certainly include scribble-marks, a significant aspect for 3 and 4 year-old children as they begin to attach mathematical meanings to their marks. Their graphics also include drawings, words, personal and standard symbols which children choose to use to explore and communicate their mathematical thinking, supporting their understanding at a deep level.

Part of the confusion stems from the often undefined use of the term ‘mark making’, the use of which is contested by many researchers as lacking clarity and failing to do justice to young children’s understanding. The term ‘graphics’ is increasingly used in the context of young children’s drawing and writing and is the reason we originated the term ‘children’s mathematical graphics’.

Just to clarify, ‘Recommendation 4’ of the Williams Maths Review proposed that materials should be written to support professional development on *children’s mathematical graphics* and mathematical development and last year we were commissioned to write the booklet *Children Thinking Mathematically* (DCSF, 2009). This includes many examples of *children’s mathematical graphics* and shows how they are much, much more than ‘squiggles and scribbles’.

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