

Maulfry Worthington

Children make many meanings with their marks

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During the past thirty years there has been a growing interest in the meaning young children make in different contexts. Studies of early writing, children's schemas and drawings have been the focus of much research. As they explore in these different ways, children make personal sense. Young children gradually differentiate and refine their marks for different purposes: for example, they begin to show that they know the difference between their marks that a drawing of grandma and those they make when writing a letter to her.

One hundred languages, many literacies

Since the introduction of the national Literacy Strategy, the term 'literacy' has been used in the context of teaching English, with an emphasis on children becoming fluent with reading and writing. However, there is a growing number of educational writers who recognise the multiple literacies which children develop. These include written marks and symbols in art, language (writing), music, mathematics, science and electronic text. Studies now also include children's representations through model-making and other media, cut-outs, pretend play and block play. This broader perspective is in tune with Malaguzzi's 'hundred languages'. In supporting children's multiple literacies we will value their amazing potential. We will marvel as young children invest considerable energy in making sense of their experiences through drawing and other graphical 'languages'. Children's own marks represent their journey to becoming artists and writers. And, when encouraged and valued, young children's early, informal mathematical marks also develop into later abstract symbols of mathematics.



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Figure 1: Charlotte, aged 4 years and 2 months – “I’m doing hundreds and pounds”

Mathematical marks – and meaning

Numerous studies of early development of children’s drawing and early (emergent) writing have helped Early Years teachers appreciate the value of children’s mark-making. These studies have uncovered children’s amazing development of understanding. In contrast, children’s own mathematical marks have been seriously under-researched.

During the past 12 years we have analysed almost seven hundred examples of children’s mathematical marks. These examples have come from children between the ages of three and eight years, from children in their homes and in nursery and school settings in which we have taught. Like the studies of children’s early writing development, we have been able to trace a developmental pathway of children’s understanding of mathematical symbols and language.

Children’s own marks provide a window on their thinking. In the Foundation stage teachers recognise that just as copy writing does not help children understand writing at a deep level, ‘colouring in’ is not art. In mathematics it is also important that children are supported as they build their understanding of mathematical symbols on their own informal marks, rather than trace over or copy numbers or colour in worksheets.

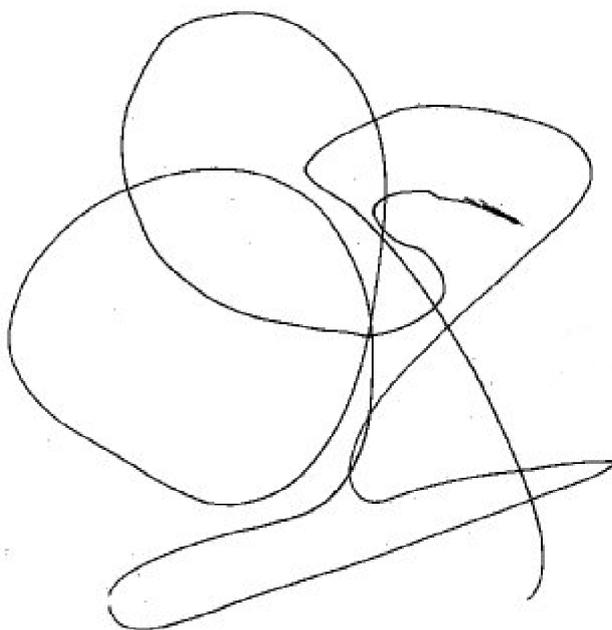


Figure 2: Matt, aged 3 years 1 month: “my number’s 1, 2, 3, 4, 6, 7 and 11”

Marks made by three and four year olds may not look like standard mathematics, but rather than being careless, random marks, their earliest scribbles need to be valued and any comments they make, taken seriously. These early marks are important and

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intentional representations that have a highly significant role in their development. Children's earliest marks are intuitive and research is now linking children's early scribbles and mark-making with studies of the brain.

In the Foundation stage

Teachers in schools may feel greater pressure to encourage children to write 'correct' numbers and to use mathematical symbols than staff in pre-school settings. However, both the Curriculum Guidance for the Foundation stage and the National Numeracy Strategy recommend that children 'put down something in their own way' when representing their mathematical thinking on paper. Blank paper rules!

If we are good 'child-watchers', we will plan from what we have observed that young children can do. We will support their informal, intuitive development in their many literacies within the Foundation stage.

In our own study the stunning range of children's mathematical graphics and their ability to make meaning, constantly surprises and delight us. Drawings and other marks that humans make have been significant and powerful features of our development. Graphical and symbolic languages have important roles in the lives of millions of people today, more than at any time in our history. Perhaps it is now time to recognise the huge potential that children's early mathematical marks make, in helping them to understand the abstract symbolism of mathematics.

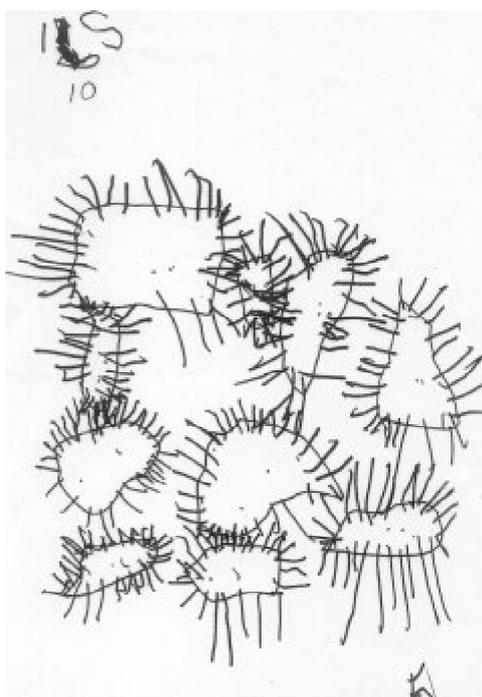


Figure 3: Karl, aged 3 years 1 month "there's ten tables"

Mathematical marks are just some of the literacies children develop. We invite you to consider mathematical literacy as one of the hundred languages of children. What do

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you see? How might you begin to support mathematical literacy in your setting?

Note: Charlotte and Matt self-initiated their marks and attached their own meanings to them. Karl's class had been invited to make an audit of items in the classroom (to help the headteacher). His example shows what he chose to do and his personal means of representation.