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**An early algebra approach to pattern generalisation: actualising the virtual through words, gestures and toilet paper.**

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Summary: This paper focuses on pattern generalisation as a way to introduce young students to early algebra. We build on research on patterning activities that feature, in their work with algebraic thinking, both looking for sameness recursively in a pattern (especially figural patterns, but also numerical ones) and conjecturing about function-based relationships that relate variables. We propose a new approach to pattern generalisation that seeks to help children (grades 2 and 3) work both recursively and functionally, and to see how these two modes are connected through the notion of variable. We argue that a crucial change must occur in order for young learners to develop a flexible algebraic discourse. We draw on *A. Sfard's* [Thinking as communicating. Human development, the growth of discourses, and mathematizing. Cambridge: Cambridge University Press (2008; ME 2011d.00346)] communication approach and on *G. Châtelet's* [Figuring space. Philosophy, mathematics and physics. Dordrecht: Kluwer Academic Publishers (2000)] notion of the *virtual* in order to pursue this argument. We also root our analyses within a new materialist perspective that seeks to describe phenomena in terms of *material entanglement*, which include, in our classroom research context, not just the children and the teacher, but also words, gestures, physical objects and arrangements, as well as numbers, operations and variables.

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