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McKnight, Amy; Mulligan, Joanne

Teaching early mathematics “smarter not harder”: using open-ended tasks to build models and construct patterns.

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Summary: Open-ended tasks focused on content specific features are regarded as an effective way to promote particular concept development and to elicit higher-order thinking. Such tasks may vary widely in their focus and approach and they can be formulated without unnecessary complexity. When mathematics tasks are designed in an open-ended fashion they can also provide flexible opportunities to cater for a range of differing student abilities. In this article, it is shown that they can be appropriately utilised in the development of measurement, space and geometry, number, and pattern concepts to achieve a range of learning outcomes. The authors discuss the construction and pattern work produced by young children in response to open-ended tasks. (Contains 8 figures.) (ERIC)

Classification: D51 D52 D41 D42

Keywords: concept formation; thinking skills; problem posing; models; outcomes of education; young children; mathematical concepts; geometry; spatial ability; kindergarten; preschool children

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