

Preschoolers writing of multidigit numbers: From an additive to multiplicative representational system?

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Abstract: Possible systems for representing multi-digit numbers include additive systems (such as roman numerals) in which unique symbols that represent different amounts are written in strings and multiplicative systems in which the same digit represents different multiples of different set sizes depending on place, as in the base-10 place value system. Multiplicative systems such as this depend on place holders (zero). Preschool children (4 to 6 years of age) prior to any explicit training with multi-digit representations were asked to write 2 and 3 digit numbers. Children's responses were collected and coded for a variety of features. Young children on their own seem to develop an additive idea about how to represent multidigit numbers, that preserves left to right place value, and uses 0 to represent group size (e.g., two hundred twenty seven = 20027 or 200207).