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The string task: not just for high school.

Teach. Child. Math. 21, No. 5, 282-292 (2014).

Summary: The study of functions has traditionally received the most attention at the secondary level, both in curricula and in standards documents – for example, the Common Core State Standards for Mathematics and [*National Council of Teachers of Mathematics*, Principles and standards for school mathematics. Reston, VA: NCTM (2000)]. However, the growing acceptance of algebra as a K–12 strand of thinking by math education researchers and in standards documents, along with the view that the study of functions is an important route into learning algebra, raises the importance of developing children’s understanding of functions in the elementary grades. What might it look like to engage students in functional thinking in the elementary grades? Elementary school curricula often include a focus on simple patterning activities (e.g., recursive number sequences, such as 2, 4, 6, 8, . . .) in which only one variable is observed. However, an exclusive focus on this type of activity might hinder the development of students’ reasoning about how two or more quantities vary simultaneously, a key component of functional thinking. *M. L. Blanton* et al. [Developing essential understandings of algebraic thinking. Grades 3–5. Reston, VA: NCTM (2011)] argue that elementary school students are in fact capable of engaging in this type of thinking. Furthermore, they point out that focusing on functional thinking provides a context for students to understand the role of variable as varying quantity. This article supports *M. L. Blanton* et al.’s [loc. cit.] argument by sharing a classroom episode as well as pre-instruction and post-instruction data from a yearlong teaching experiment. The authors discuss some of the crucial elements they believe contributed to students’ growing abilities to engage in functional thinking. They also discuss connections made among various representations, another important benefit of having students engage in functional thinking. (ERIC)

Classification: D82 I22 U62

Keywords: mathematical concepts; concept formation; activities; manipulative materials; functional thinking; visualization

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