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Links between algebra and arithmetic.

Math. Teach. Inc. Micromath 2008, No. 211, 14-16 (2008).

Summary: General Certificate of Secondary Education (GCSE) mathematics assessment previously included a piece of coursework that required learners to develop a general equation to describe the relationship between two groups of numbers on a number grid. In this author's experience, it became clear that Year 10 students often struggled to form a link between arithmetic patterns and algebraic generalities. Also, his work with sixth-form students highlighted situations where they were uncomfortable with manipulating algebraic expressions without changing the variables to x and y , which suggested that even these quite capable mathematicians saw algebra as a distinct process separate from other areas of mathematics. In this article, the author investigates a class of 20 Year 10 students of average ability on two aspects of their use of algebra – as a description of a general arithmetic connection/progression and as a valid method of proof that a connection exists – using the process known as the "clinical interview", allowing him to gain as much information as possible about each student's understanding of the concepts involved. (Contains 3 figures.) (ERIC)

Classification: H23 C33

Keywords: mathematics activities; arithmetic; elementary algebra; grade 10; mathematical concepts; equations; mathematical logic; interviews; concept formation; interviews