

ZMATH 2011b.00707

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$3a + 2a = 5a$ without apples: The algebra as object analogy.

Math. Sch. (Leicester) 38, No. 1, 4-6 (2009).

From the introduction: In this article I argue that there are a whole number of problems with using the 'algebra as object' analogy, and give some alternative methods of teaching the simplification of algebraic expressions. To do this, first I give an example of what I consider to be a 'good' analogy, that of merits / demerits for teaching negative number arithmetic, explain why I consider algebra as object to be a poor analogy for teaching purposes, and then look at a range of alternative ways of addressing this crucial point.

Classification: H20

Keywords: concept formation; elementary algebra; variables; terms; place holders; numerical values; exploring patterns; simplifying