

Correspondence

Number in the nursery

DEAR SIR,

I am moved by Geoffrey and Julia Matthews' article *Pre-school pre-mathematics* in *Gazette* No. 400 (June 1973) to put a few questions to myself, the authors, and any reader who may find them meaningful.

(1) The vast majority of all words—nouns (except proper nouns), adjectives, verbs, adverbs—refer to classes (of objects, actions, sensations, emotions, etc.). Why is it necessary to make a special point that "five" refers to a class? Would not anyone who already knows many words expect this to be the case?

(2) What is the grammatical function of the word "five"? Is it adjective or noun? Does it shift from one to the other? Why? Do any other words shift their function in a similar way?

(3) Red objects remain red even when pushed around. What makes this statement more or less certain than "5 objects remain 5 even when pushed around"?

(4) Given two clocks which can tick off "one, two, three, ..." rhythmically, and starting the second when the first has spoken a particular numeral, say "five", the first will speak "eleven" when the second speaks "six". This model could be made the basis of a definition of the addition of numerals independent of any consideration of the attributes of sets of objects. What is the real gain, if any, in basing a definition of addition on the union of disjoint sets? And if this approach is adopted, what aspect of this experience leads to an awareness of the invariance of the unit in the sequence of numerals?

(5) Although some children may have difficulties with the place-value of written numeration, yet most children find counting 'on and on' easy once they have mastered the beginning steps in the sequence. If speech can so readily give the sequence of numerals, can it perhaps yield awarenesses which, when translated into the medium of written numeration, become the concept of place-value?

My five questions can be broadly said to lie in the region of overlap between mathematics and language, remembering that language has spoken as well as written forms. There are lots of other questions in this region which do not seem to have been examined carefully and systematically by Piaget, Dienes, or the Nuffield team, or any of the other contributors to the current folklore. With more solid work on them more of us would know how to regard such pyrotechnic displays of opinion as the Matthews' article.

Yours faithfully,

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Confidence intervals for a population median

DEAR SIR,

After reading the article *Down with the mean* in the *Gazette* for June 1971, I became interested in the section on constructing a confidence interval for the median. With the aid of an extensive computer listing of the binomial distribution I have been able to compile a table for use in this situation. I would be pleased to supply a copy to any reader who is interested, on receipt of a stamped, addressed envelope.

Yours faithfully,

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