

To the Editor, *The Mathematical Gazette*

DEAR SIR,

To those of us concerned with teacher training, the article on the Newsom Report by Canon Eperson, published in the February issue of *The Mathematical Gazette*, was of great interest.

The writer makes two points of first-class importance: first, that students in Colleges of Education need to be made aware of the beauty of mathematics as distinct from its utilitarian value, and, second, that they need personal experience of the satisfaction to be gained from the flash of insight into some aspect of the subject, before they can be expected to be able to inspire their pupils with the right attitude towards mathematics.

It is so gratifying to see these essentials recognized, that it seems almost churlish to suggest that the writer's detailed examples are disappointing. Take, for instance, the test for exact divisibility by 9. Surely this gives an ideal opportunity for students to generalize by realizing that the same pattern exists for numbers expressed in terms of number bases other than 10. Using the Multibase Arithmetical Blocks of Dienes, they became familiar with numbers written to base 3, 4, 5 or 6 and it gives them considerable pleasure to spot for themselves that the divisibility test works for the number one less than the base, in each case. From this they can particularize for base 12, (e.g. shillings and pence) for base 16 (pounds and ounces) and so on. They can then think about the test for division by the number one more than the base. This exemplifies the very nature of the subject.

Another point which needs comment refers to the use by children of "Addition Squares" and "Multiplication Squares." These seem so dead. It is just as possible for a child to get a number from the chart without understanding as it is to recite tables without understanding. The number track, or the Cuisenaire rods, provide a much livelier "calculating machine," and, preferably taken together, they give insight into number processes rather than just providing the answer. The same idea underlies the use of the desk calculator.

The spirit in which student teachers are trained is a matter of such fundamental importance that I hope that even these few illustrations do not seem too trivial.

Yours sincerely,
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