Some special numbers

DEAR EDITOR,

At a recent mathematics conference, a member of the conference came up with a set of numbers I had not heard of and I thought that a wider audience may bring results.

The numbers are called STØPHOMN, although nobody was sure of the spelling. Their properties are:

(i) each digit is prime
(ii) the sum of the digits is prime
(iii) the number itself is prime

No one was sure if the set of these numbers was finite.

One of the member's room number was 223 which has the added property that $2^n + 2^n + 3^n$ is prime for $1 \leqslant n \leqslant 6$. This makes 223 a sixth order STØPHOMN number.

Can anyone help with further information?

Yours sincerely,
PETER WICKS

Farnham College, Morley Road, Farnham, Surrey GU9 8LU

Reviews

The I hate mathematics! book, by Marilyn Burns. Pp. 96. £6·95 (hardback), £3·95 (paperback). 1987. ISBN 0-521-33414-4/33659-7 (Cambridge University Press)

She met me with her file on space. She told me about Mars, Haley's Comet, the Horse's Head Nebula, Saturn, Jupiter, Laplace's Nebula and the Spiral Galaxy, and announced that she wanted to go into space when she grew up. My son at the same age (seven) knew all about the birds of Britain and how to bet and win on horses, and my brother in his day knew all about motor bikes and used to make intricate, correct models of them in plasticine.

What, you are no doubt wondering, has all this got to do with *The I hate mathematics! book*? I think that what it has to do with the book is that children, from an early age, are capable of absorbing a prodigious amount of information on matters that interest them, and that it is sad that so few people have had the idea (or at any rate pursued it if they had it) of providing for children material that might make mathematics as exciting as motor bikes, birds and space. I think *The I hate mathematics! book* makes a start on something like this for us.

My hackles rose at the title. How could anyone reinforce the poor image of mathematics by splashing it over our bookshelves? I read a little and found myself becoming disarmed by its use of genuine mathematical vocabulary. But much too hard for young children, I thought before I remembered the space file and the complex space vocabulary included in it.

The book is written and illustrated in a highly readable way, using all the typical ploys of comics and other commercial reading matter for children. Its humour is the humour that appeals to children of all ages. It uses games, puzzles and some well known problems, besides encouraging children to think that pursuing mathematical activities in their fantasies and in their everyday lives is an attractive rather than a dull, mundane occupation. It touches on some decidedly more advanced mathematical ideas, perhaps thereby threatening us as teachers by risking for us the time honoured claim 'We've done that before'.

For me the most significant feature of the book is that it never shrinks from using the appropriate mathematical vocabulary, however light-hearted the setting within which it is introduced. It thus confronts what is to many people the alien nature of mathematical language and in doing so it becomes a book that ordinary children (and people) can read and enjoy.