



DEAR Dr Maths,
We like to try to do your puzzles as a family.
Can you recommend books or websites
where we could find more puzzles?

LYNN, NEWCASTLE.

I have always thought puzzles are a great way to improve your mathematical understanding. From a young age it is good for children to exercise their brain with puzzles. Recent research carried out at the University of Michigan in America has shown that mental exercise such as maths puzzles improves overall problem-solving ability. The more the participants in the research trained the more problems they could solve. Research has also shown this does not just benefit the young, as in studies of people over-65 who regularly exercised their brains with puzzles, it was found it could improve their memory by 10 years.

There are many great puzzle writers, such as Martin Gardner who has written a colossal number of excellent puzzle books. One of my favourites is *Mathematical Puzzles and Diversions* published by Penguin.

A classic puzzle writer from the last century is Henry Ernest Dudeney who wrote the book *Amusements in Mathematics* in 1917. You can still buy the book or freely download his puzzles at www.gutenberg.org/etext/16713

His book contains some of the greatest puzzles ever thought of. Another source of puzzles is the website www.puzzles.com – this site not only contains a range of puzzles but also has puzzle games.

Here is a lovely puzzle to exercise your brain.



The puzzle is to move two children who are occupying adjoining chairs and to place them in two empty chairs, reversing their original positions. For example, boy girl becomes girl boy. Then repeat the process with a second pair of children from adjoining chairs, placing them in the two newly vacant seats, also reversing their original positions.

The process is then repeated until all the boys are together and all the girls are together, with the two vacant chairs at one end. What is the minimum number of moves required to achieve this?

Write in with your answer and the first correct entry drawn will win a copy of *A Puzzle A Day* published by Tarquin.

Well done to Mr J Douglas from Stanley, who correctly worked out the values of x in the algebra equations to be 2, 4 and 10.5.

Do you have a maths question or problem? Write to Dr Maths, Evening Chronicle, Groat Market, Newcastle, NE1 1ED or send an e-mail to DRMaths@hotmail.co.uk