

# NEW! Puzzles of the Fortnight

## Lower/Middle School

### “Think Of A Number”

I'm thinking of a number.

It's less than 100.

It's one more than a multiple of 3.

Exactly one of the digits is prime.

If you reverse its digits, you get a prime number.

It has exactly four factors.

The sum of its digits is prime.

If you multiply it by 5, the answer is greater than 100.

What is my number?

Written solutions (with *full* working!) by 17<sup>th</sup> November on A4 paper to Mr Taylor directly, or his desk in M114.  
The first correct solution out of the hat wins a prize!

## Sixth Form

### “An Average Puzzle”

John Smith finds an ordinary piece of paper on which a number of integers are listed.

The smallest integer on the list is 10.

The mode is 32 and the mean 22.

The median,  $m$ , of the integers is also on the list.

If this integer were replaced by  $m + 10$ , the new mean would be 24 and the new median  $m + 10$ .

If instead  $m$  were replaced by  $m - 8$ , the new median would be  $m - 4$ .

What are the integers on John Smith's ordinary piece of paper?

Write up your solution on a single page of A4. Hand it to Mr English directly, or leave it in his pigeonhole in the Masters' Common Room, by Friday 17<sup>th</sup> November. The first correct solution out of the hat wins a £5 Amazon voucher.

Check out the Maths department Firefly page for details of last week's Puzzles & winners!