## © MathSphere www.mathsphere.co.uk

## Puzzle time

## Funky 15

For this puzzle it is a good idea to have a set of 0 to 9 cards. If you haven't got any don't worry - just jot down the numbers 0 to 9 on a piece of paper and cut them out, or use the numbers below.


Use 3 cards to make a total of 15.

Easy eh!
But what I want to know is:

## how many ways are there of making 15 by adding three cards?

(Don't forget to use the nought card!)
Lots of thought needed for this one!


Find the answer on the next page.

## Puzzle time

Funky 15 - answers
This puzzle might cause a lot of controversy. Remember - it was how many ways can you make 15 by adding 3 cards.

The most straightforward answer is 10 , believe it or not. But.... several different answers might also be considered correct.

Here's a good explanation of how 10 was reached:
"I worked this out by writing down all the combinations of 15 to start with (there were 64 of them). Then I sorted them all out by crossing off all the combinations that were repeated more than once. This leaves 10."

The combinations are: 069, 078, 159, 168, 249, 258, 267, 348, 357, 456.

All others (eg 654) are repeats of the above as $6+5+4$ is exactly the same as $4+5+6$.

## Funky eh!!

Now, you might have some answers where the 1 was used as a tens digit - eg $10+5,11+4,12+3,13+2,14$ +1 and $15+0$. Fine!!

