

Mr Brown Challenge Maths Day 4

Hi team,

I hope you've been enjoying the challenges so far. Bit of a change of tactic today. Instead of challenges, I'm going to pose some investigations for you to have a go at. Remember, you can always email the Year 5/6 team your work or upload it to Padlet!

As it's nearing the end of the week, if you find a challenge that's hard or you want to set me one, feel free!

Good luck.

Investigation 1 - Palindromes

Think of a three-digit number. Reverse the digits to generate a second number. Subtract the smaller from the larger. Reverse the digits again. Add the two new numbers.

e.g. 341
 143

 198
 891

 1089

Do you always get 1089? If so, why?

Try with 2, 4, 5 digit palindromes.

Investigation 2 - Barcodes

The digits in barcodes have the following meanings.

The first two digits indicate the country.

The next five digits indicate the manufacturer.

The next five digits indicate the product.

The final digit is called the 'check digit' and it is included to confirm that the number has been scanned correctly.

The check digit of a barcode, which is the thirteenth digit, is calculated as follows:

Split the previous twelve digits into two sets: those in odd place order (i.e. the first, third, fifth, etc. digit) and those in even place order. These are referred to below as 'odd' and 'even' digits.

Calculate the following:

(the sum of the 'odd' digits) + (3 × the sum of the 'even' digits).

The final check digit is the smallest number you need to add to the result to get a multiple of ten.

Find some things with a barcode. Make sure the check digit is correct.

What other 'secret codes' can you find out about?