

## NHS Number Check Digit Calculation

The NHS number comprises 10 digits. The first nine are the identifier and the tenth is a check digit used to confirm the number's validity. The check digit is calculated using the Modulus 11 algorithm. There are four steps in the calculation:

- **Step 1** - multiply each of the first nine digits by a weighting factor as follows;

Digit Position (Starting from the left)	Factor
1	10
2	9
3	8
4	7
5	6
6	5
7	4
8	3
9	2

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- **Step 2** - add the results of each multiplication together
- **Step 3** - divide the total by 11 and establish the remainder
- **Step 4** - subtract the remainder from 11 to give the check digit

There are two occasions where the check digit calculation process must be modified slightly:

- if the result of step 4 is 11 then a check digit of **0** is used
- if the result of step 4 is 10 then the number is invalid and not used.

**Example:** Suppose the first nine digits of the number are **401 023 213**

- **Step 1** - apply weighting factors

Digit Position	Value	Factor	Result
1	4 x	10	= 40
2	0 x	9	= 0
3	1 x	8	= 8
4	0 x	7	= 0
5	2 x	6	= 12
6	3 x	5	= 15
7	2 x	4	= 8
8	1 x	3	= 3
9	3 x	2	= 6

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