Tuesday 26.1.21

L.O.   I can add 3-digit numbers using expanded addition

Yesterday we looked at expanded addition when the tens carry over to the hundreds column. Here's another example:

EXPANDED METHOD

Example 1:   63 + 92

```
h   t   o
    6   3
              +
    9   2
_____
        5        (3 + 2 = 5)
1   5   0        (60 + 90 = 150)
_____
1   5   5
```

So: 63 + 92 = 155

We used estimation to check if the answer was sensible…

Example 1:   63 + 92

We can round to the nearest
10 to estimate the answer:

60 + 90 = 150

So we know our answer of 155
is a reasonable one.

We have also tried examples where the ones carry over into the tens column:

EXPANDED METHOD

Example 2: 239 + 154

```
  h  t  o
  2  3  9
  1  5  4  +
 _____
     1  3      (9  +  4  =  13)
     8  0      (30 + 50  =  80)
  3  0  0      (200 + 100  =  300)
 _____
  3  9  3
```

So: 273 +164 = 393

Again we should check if the answer is sensible...

Example 2: 239 + 154

This time we can round to the nearest 100 to estimate the answer:

200 + 200 = 400

So we know our answer of 393 is a reasonable one.

Can you work out what has gone wrong with this calculation?

EXPANDED METHOD

Example 3: 129 + 233

h	t	o	
1	2	9	+
2	3	3	
	1	2	(9 + 3 = 12)
5	0		(20 + 30 = 50)
3	0	0	(100 + 200 = 300)
8	1	2	

So: 129 + 233 = 812

Let's estimate…

Example 3: 129 + 233 = 812

Round to the nearest 100 to estimate the answer:

100 + 200 = 300

So we know our answer of 812 must be incorrect.

Let's go back and try again:

EXPANDED METHOD

Example 3: 129 + 233

```
  h   t   o
  1   2   9
  2   3   3   +
 ─────────────
      1   2    (9   +   3   =   12)
  5   0   0    (20 + 30  =  50)
  3   0   0    (100 + 200  =  300)
 ─────────────
  3   6   2
```

So: 129 + 233 = 362

TASK: You should try to complete **two** sections

EXTRA MILD	MILD	SPICY	HOT
18 + 10	39 + 20	145 + 233	438 + 214
17 + 3	46 + 23	350 + 246	472 + 386
26 + 10	24 + 35	183 + 64	463 + 258
15 + 5	28 + 41	249 + 25	543 + 267
8 + 8	33 + 26	352 + 271	694 + 149

Challenge: Choose two 3 digit numbers, each bigger than 200, that add together to make 652. Can you find 5 different ways to do it?
Example: 240 + 412 = 652