

## No left-overs here!



**CALCULATOR  
CRUNCH**

DAY 8

# No left-overs here!



Work out the missing numbers in these division expressions that will mean that there are no remainders and the answer (or quotient) will be a whole number.

|   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|
| 1 |   | 8 | 2 | ÷ | 7 |   |
| 6 |   | 3 | 9 | 5 | ÷ | 5 |
|   | 5 |   | 4 | ÷ | 9 |   |
|   |   | 3 | 3 | ÷ | 3 |   |
| 3 | 8 |   | 6 | ÷ | 6 |   |
|   | 0 | 8 | 4 | ÷ | 4 |   |

Keys allowed:

|     |   |   |       |
|-----|---|---|-------|
| 7   | 8 | 9 | RESET |
| 4   | 5 | 6 | ÷     |
| 1   | 2 | 3 |       |
| DEL | 0 |   | =     |

What strategies did you use to decide on the missing digits?

Are there any that can be solved in more than one way and can you explain why?

### Aim of the activity

**This activity is all about division and remainders or trying to avoid them!**

**There are missing numbers in the expressions (the calculations) and you need to work out what they are.**

**There may be more than one solution to some of them.**

### Language

We have given you six expressions to work on as they don't have an = sign as they are written.

We have also used the word quotient as this is the name given to the 'answer' of a division.

## Using a calculator



These are the keys allowed are but are there any other operation keys that you think would be useful?

What strategies can you use to decide which numbers to try in the gaps?

## Top Tips

What do you know about the rules of divisibility?

How do you know if a number is a multiple of 5 (in the 5 times table)?

What about numbers which are multiples of 3, 6 or 9?

Can you think about finding multiples within the numbers?

e.g.

We know that 36 is a multiple of 6 even though this is 36 tens here  
( $380 = 360 + 20$ )

Can this help us to work out what the missing 'ones' number is?

Rules of divisibility\*:

5 – the Ones digit is a 5 (for odd multiples) or a 0 (for even multiples)

3\*\* – the digit sum of the numbers is a multiple of 3 ( $105 - 1 + 0 + 5 = 6$  so it is a multiple of 3)

6 – as for 3 but even numbers

9 – the digit sum of the numbers is 9 (or a multiple of 9)

4 – the Tens and Ones element of the number is a multiple of 4 (all multiples of 100 are divisible by 4)

\*\* The proof of this divisibility rule is beyond the maths expected at primary school

\* For further information you might want to look at segment 2.9 of the NCETM Mastery Professional Development Materials focuses on rules of divisibility