Mathematics

Expanding Double Brackets

Mrs Buckmire

Try this
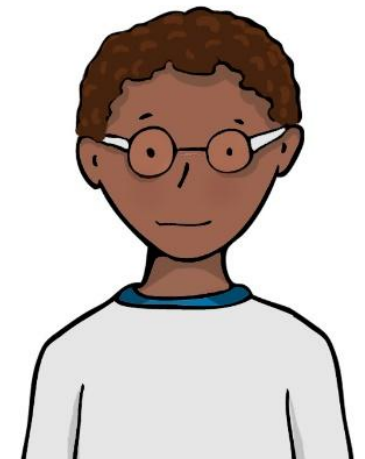
What's the same and what's different?

$$53 \times 19$$

$53 \times 19 = (50 + 3) \times (10 + 9)$

$= 500 + 30 + 450 + 27$

$= 1007$

$53 \times 19 = (50 + 3) \times (20 - 1)$

$= 1000 + 60 - 50 - 3$

$= 1007$

Independent task

Match the equivalent expressions.

$(x + 24)(x - 1)$

$(x - 6)(x + 4)$

$(x - 12)(x + 2)$

$(x + 8)(x - 3)$

$x^2 + 5x - 24$

$x^2 + 23x - 24$

$x^2 - 10x - 24$

$x^2 - 2x - 24$

Explore

$$(x + a)(x + b)$$

Fill out the rest of the grid and give the expanded form of each expression.

What do you notice about the highlighted cells?

Can you create similar examples to those highlighted?

a increases in this direction

b increases in this direction

$(x-1)(x-2)$ =	$x(x-2)$ =	$(x+1)(x-2)$ =	$(x+2)(x-2)$ =	$(x+3)(x-2)$ =

Explore

$$(x + a)(x + b)$$

- What do you notice about the highlighted cells?

- Can you create similar examples to those highlighted?

a increases in this direction →

b increases in this direction ↓

= $(x - 1)(x - 2)$	= $x(x - 2)$	= $(x + 1)(x - 2)$	= $(x + 2)(x - 2)$	= $(x + 3)(x - 2)$