

AREA BOXES FOR 138×6

- Split 138 into place values: 100, 30 and 8.
- Find each partial product: $100 \times 6 = 600$, $30 \times 6 = 180$, $8 \times 6 = 48$.
- Add the three partial products: $600 + 180 = 780$, then $780 + 48 = 828$.
- Check with the column method: the same regrouped amounts appear.

WARM-UP

Use the blank area-model frames on the page.

	$\times 100$	$\times 30$	$\times 8$
6	600	180	48

Total: $600 + 180 + 48 = 828$

- Split and label the frames for 34×5 and write each partial product inside its box
- Split and label the frames for 56×4 and write each partial product inside its box
- Split and label the frames for 23×4 and write each partial product inside its box

PRACTICE

- A builder lays a path 47 bricks long and 3 bricks wide. How many bricks does he need in total?
- A carpenter cuts 72 planks and needs 3 identical sets for a frame. How many planks does she cut altogether?
- A model maker builds a wall 29 blocks long and 3 blocks tall. How many blocks fill the wall?
- A warehouse packs 1084 kits and each kit holds 9 nails. How many nails are packed altogether?
- A workshop makes 235 shelves and fits 7 brackets on each shelf. How many brackets are used?

? ALWAYS, SOMETIMES, NEVER

Always, sometimes or never true? Write A, S or N.

- Splitting a multi-digit number into place values gives partial products that add to the full product.
- The partial products of 23×4 are 80 and 12.
- You need to regroup or carry when multiplying a multi-digit number by a single digit.
- The area boxes and the column method give different totals for the same multiplication.