

Multiplication as arrays and repeated addition

WHAT THIS LESSON TEACHES

Equal groups laid out in neat rows and columns form an array. The total is rows times columns, which is the same as adding one row total again and again.

→ Three rows of five counters is an array showing $3 \times 5 = 15$.

→ $4 + 4 + 4$ is three lots of four, the same as 3×4 .

MODEL THIS ON THE BOARD

BUILDING A 4-BY-3 GAME-TOKEN ARRAY

- 1 Draw 4 neat rows with 3 tokens in each row.
- 2 Write the repeated addition under it: $3 + 3 + 3 + 3$.
- 3 Write both multiplication facts the array shows: 4×3 and 3×4 .

DISCUSSION STARTER

REFLECT Did turning the array change the answer? What stayed the same?

ANSWER KEY

a) $6 \times 7 = 42$ and $7 \times 6 = 42$

b) $5 + 5 + 5 = 15$

Q1: 56

Q2: 12

Q3: $4 + 4 + 4 = 12$

Q4: 10

a) **Always** — Both arrays hold 15 counters, so the multiplications are equal.

b) **Always** — Each row is the same size so you add that number again and again.

c) **Never** — The counters stay the same; only the rows and columns swap places.

d) **Never** — $4 + 4 + 4$ is three lots of four, which equals 3×4 .

EXTENSION SHEET · STRETCH ANSWERS

Investigation: Arrays around the classroom — open-ended; scan pupils' working for valid solution paths rather than a single answer.