

Perimeter: adding sides up

CURRICULUM ALIGNMENT

MEA.MSR.4a

determine and calculate units of measurement in fractional and/or decimal form to solve practical problems.

NUM.OPS.4

build upon, select and make use of a range of operation strategies.

INTERACTIVES [Shape Measurer · display, explore](#)

WHAT THIS LESSON TEACHES

Perimeter is the total distance all the way around the edge of a shape. Find it by adding the length of every side once.

→ A 6 m by 4 m rectangle: $6 + 4 + 6 + 4 = 20$ m

→ A 5 m square: $5 + 5 + 5 + 5 = 20$ m

MODEL THIS ON THE BOARD

FENCING A GARDEN PLOT

- 1 The rectangular garden is 6 m long and 4 m wide.
- 2 Add every side as you walk right around the edge.
- 3 Write the sum $6 + 4 + 6 + 4$.
- 4 First $6 + 4 = 10$, then $10 + 6 = 16$, then $16 + 4 = 20$.
- 5 You need 20 m of fencing.

LESSON ARC

Open with the fairy-lights-round-the-notice-board image, then move to the board: trace round three marked shapes — a 6×4 rectangle, a square, and an L-shape — adding each side aloud. The square reveal is the pivot: same perimeter, different shape. A pupil reshapes the interactive from a 5×3 rectangle to a 7×2 to an L. Pupils label and total each shape in copybook, then measure a desk, their book, and printed polygons for real with metre sticks and rulers.

TEACHING MOVES

1. **Getting Started.** Take two or three hands-up answers, not open call-outs. Listen for anyone who says 'measure round the edge and add it up' — grab that phrasing and hold it, it's exactly where you're heading.
2. **Watch and Notice.** Trace each edge with your finger and add aloud as you go. On the square, hold out for a prediction before the reveal — the class usually expects a bigger number and is surprised it also lands on 20; name that as 'same perimeter, different shape'. On the L-shape, count the six sides together out loud so nobody drops the two short inner sides at the corner.
3. **Try It Together.** Bring a different pupil to the board for each shape as you drag the corners from 5×3 to 7×2 to the L. Before reading the readout, have the class add the sides aloud first. On the 7×2 , watch for ' $7 + 2 = 9$ ' — ask 'have you walked the whole way round?'
4. **Label the Sides in Your Copy.** Walk the room glancing for a labelled side that never made it into the sum — that's the common miss. This is a copybook practice moment, not marking; just catch the dropped side and point back to it.

5. **Class Challenge.** Brisk practice round — pupils measure the desk, their book and the printed polygons at their tables while you circulate. Catch two slips on the spot: reading the ruler from the 1 mark instead of 0, and losing a side on the L. Confirm readings aloud at the end.
6. **What Did We Notice?.** Ask what happens to the perimeter if every side doubles. Listen for reasoning from the sum, not guessing, and revoice a strong answer: 'twice as long all the way round means twice the perimeter.' If area creeps in, park it — that's the distance around versus space inside, a lesson for another day.

COMMON MISCONCEPTIONS

⚠ On the 7×2 rectangle a pupil writes ' $7 + 2 = 9$ ' — they add the two labels they can see and stop, treating perimeter as one long plus one short side.

Ask 'have you walked the whole way round?' and trace the fourth and third sides with your finger on the interactive. Two long sides match, two short sides match: $7 + 2 + 7 + 2$.

⚠ On the L-shape pupils total only four or five sides — they miss the two short inner sides at the bent corner.

Before totalling, have pupils count how many sides the L has and say the number aloud — there are six. Point to how the L is two rectangles joined and the corner adds two extra edges.

⚠ When measuring the printed polygons, pupils line the ruler's 1 mark against the side's start instead of the 0 mark, so every reading is 1 cm short.

Stop and show one measurement under the visualiser or held up: 'where does the ruler actually start counting?' Have them re-measure one side from 0 and compare.

DIFFERENTIATION

EMERGING

- Keep these pupils on the rectangle and square in copybook while the class tackles the L; the corner-counting comes once the add-every-side habit is secure.
- Give them a pre-sketched shape with sides already labelled so they only do the adding, not the drawing and labelling at once.

DEVELOPING

- After the perimeter sheet, ask them to find a different rectangle that has the same perimeter as the 6×4 (e.g. 5×5) — same total, different shape.
- Pose a missing-side puzzle: an L-shape with five sides given and the sixth blank, total perimeter stated — what's the missing side?

PROFICIENT

- Move them straight to measuring the hexagon on the sheet, then ask: could you find the perimeter of that L-shape without measuring every side — which sides must equal which? Have them justify it in copybook.
- Narrate a harder variant at the board for fast finishers: give an L-shape in metres with two sides unmarked and ask them to reason out the missing lengths from the sides they know.

✂ **Cross-curricular:** Tie to geography — pupils pace out and add the sides of the school yard or a marked GAA pitch to estimate its perimeter in metres.

ANSWER KEY

a) 16 m

b) 20 m

c) 32 m

Q1: 40 m

Q2: 18 m

Q3: 42 m

Q4: 26 m

Q5: 50 m

a) **Always** : You must add length + width + length + width to go all the way around.

b) **Always** : Both sums equal 20 m so the perimeters match.

c) **Never** : All four sides must be added or the short sides are missed.

d) Never : Perimeter adds the sides while area multiplies length by width.

EXTENSION SHEET · STRETCH ANSWERS

S1: 11.4 m

S4: 29.8 m

S2: 23 m

S5: 21.2 m

S3: 25.6 m