TEACHER RESOURCE BOOK · MATHS · 3RD CLASS

Lesson 54 MEASURES

Perimeter of rectangles and simple shapes

CURRICULUM ALIGNMENT

SHA.SHP.3b represent shapes with drawings and models, and calculate dimensions of shapes.

SHA.SHP.3a investigate and analyse the properties of 3-D and 2-D shapes and identify classes of shapes based on these properties.

INTERACTIVES Shape Measurer · 2d

LESSON ARC

Open with a rectangle labelled only along the top (6 cm) and one side (3 cm) on the IWB — pupils reason that the unlabelled sides must match before any adding. Walk three worked examples (6 by 3, a 5 cm square, 7 by 2), filling missing sides first and adding each side once. Pupils draw a 5 cm by 3 cm rectangle in their maths copy, then the Class Challenge runs squares, rectangles and an L-shape at the board.

TEACHING MOVES

1. **Getting Started.** Display the rectangle labelled 6 cm along the top and 3 cm down one side only. Take three hands-up answers — not call-outs — to 'what must the other two sides be, and how do you know without measuring?' Listen for pupils naming the matching opposite sides.
2. **Watch and Notice.** Point to each side as you add it: 'the bottom matches the top, the second side matches the first.' For the 5 cm square, draw out that it's four lots of 5. For 7 by 2, fill in the two missing sides first, then add — say 'add each side once, never twice.'
3. **Try It Together.** Pupils take turns at the board on the interactive. Drag the corner handles to re-set new given sides each time (4 by 3, 5 by 2, 6 by 4, 3 by 3, 8 by 2). Each pupil fills in the matching opposite sides first, then reads the perimeter; the class confirms each pair matches before the total.
4. **Draw the Rectangle in Your Copy.** Pupils draw a 5 cm by 3 cm rectangle in the maths copy and write a number on all four sides, then the perimeter sentence underneath. Walk the room glancing for any side left blank or counted twice — this is practice, not marking.
5. **Class Challenge.** Show each shape in turn — 4 by 4 square, 6 by 3, 7 by 4, then the L-shape — and keep the board work brisk. For each, ask 'which sides are hidden, and how did you find them?' before the perimeter is read. Give the 7 by 4 a moment more as it's new, and the L-shape's six sides for the strongest pupils.
6. **What Did We Notice?.** Ask why two measurements tell you all four sides. Revoice a strong answer: 'so the opposite sides are always equal, which means two measurements tell us all four.' Head off the idea that every side must be measured separately.

COMMON MISCONCEPTIONS

⚠ Pupils add only the two labelled sides — 6 + 3 = 9 — and call that the perimeter, forgetting the two matching opposite sides.

On the interactive, point a finger to each side in turn and count aloud '6, 3, 6, 3 — four sides, not two.' Have the pupil trace all the way around the edge with their finger before re-adding.

⚠ On the L-shape, pupils count the two unlabelled sides as zero or skip them because no number is printed.

Stop on the L-shape and show how a hidden side equals the difference of two opposite runs — e.g. the long side minus the notch. Have the pupil write the worked-out number on the shape before adding the six sides.

DIFFERENTIATION

EMERGING

- On the interactive, pre-fill the two opposite sides with their matching numbers so pupils only add, not work out which sides match.
- In the copybook, give a 4 cm by 2 cm rectangle with all four sides already numbered — pupils write the addition and total only.

DEVELOPING

- After the copybook rectangle, ask pupils to find a different rectangle that also has a perimeter of 16 cm, and another, and another.
- Give a rectangle labelled with perimeter 20 cm and one side 6 cm — work backwards to find the missing side.

PROFICIENT

- On the L-shape in the Class Challenge, narrate a harder variant from the front: an L-shape with one extra notch so there are eight sides and three to work out. Ask the pupil to explain how they found each hidden length.

↗ **Cross-curricular:** Tie to Geography — pupils sketch a rectangular county GAA pitch to scale on squared paper and work out the perimeter a player runs in one full lap.

ANSWER KEY

a) Perimeter = distance all the way around.

b) Add all four sides for a rectangle.

c) Area = number of unit squares covered (rows × columns).

Q1: 76 m

Q2: 84 m

Q3: 44 m

Q4: 36 cm

EXTENSION SHEET · STRETCH ANSWERS

S1: 106 m

S2: 77 m