TEACHER RESOURCE BOOK · MATHS · 3RD CLASS

Lesson 43 MEASURES

Length — estimate and measure with a ruler (cm)

CURRICULUM ALIGNMENT

MEA.MSR.3a compare, estimate and measure length, weight, capacity, area and volume using appropriate instruments and record and communicate appropriately.

INTERACTIVES Measurement Rulers · display, explore

LESSON ARC

Hold a new pencil against the ruler interactive and take three hands-up estimates — more or less than ten? Walk four worked measures (crayon 6 cm, pencil 9 cm, copybook 11 cm, rubber 4 cm), each pivoting on the start sitting on the zero, not the 1. Pupils then estimate and measure five real desk objects with their own rulers, ordering them shortest-first, before logging estimate-beside-measurement in their copybook.

TEACHING MOVES

1. **Getting Started.** Hold the pencil against the ruler and ask only 'more or less than ten?' — take three hands-up estimates, not open call-outs. Hold off the real length; the point is committing to a guess before checking.
2. **Watch and Notice.** Walk the four objects one at a time on the interactive. Each time point to the zero end first — 'see how it sits on the zero, not on the 1.' On the copybook-edge example (11 cm), slow right down past the ten: 'ten, then one more.'
3. **Try It Together.** Call up one pupil to read the object on the board to the nearest centimetre. Before they read, ask the whole class 'is the zero lined up?' If a pupil reads from the 1, that's your teaching moment — show the reading comes out a centimetre short. Reset the object for each of four pupils.
4. **Class Challenge.** Send pupils to measure five desk objects with their own rulers — estimate all five, measure all five, then order shortest-first. Circulate and catch the start-from-the-1 slip on the spot; keep an 'about 10 cm' object on the front desk so nobody stalls choosing one.
5. **Write Your Estimates in Your Copy.** Glance at the estimate-then-measure column layout as you walk — not marking. Praise any estimate within a centimetre to build the habit of guessing before reaching for the ruler.
6. **What Did We Notice?.** Ask why we line up the zero and not the 1. Revoice a strong answer: 'so if we start at the 1, we miss the first centimetre and our measurement comes out short.' Head off the idea that you can start anywhere as long as you count the marks.

COMMON MISCONCEPTIONS

⚠ Pupils line up the end of the object with the '1' on the ruler instead of the '0', then read the far mark straight off — every measurement comes out one centimetre short.

On the ruler interactive, measure the same crayon twice — once from 0, once from 1 — side by side so the class sees the reading change. 'There's no length yet at zero, so that's where we start.'

⚠ Pupils stall past the ten and read the copybook edge as '1' or '10' rather than 11 — the second digit throws them.

Trace the ruler aloud with the class on the interactive: 'ten... then one more... eleven.' Have them count the marks past the 10 with you before reading the far end.

DIFFERENTIATION

EMERGING

- Give these pupils only the three shorter objects (rubber, glue stick, pencil) so no reading crosses the ten — the start-on-zero rule is the focus, not big numbers.
- Put a small dot of tape on the ruler's zero so lining up the end becomes a 'touch the dot' action.

DEVELOPING

- After ordering their five, ask which two objects differ by the most centimetres, and by how many.
- Hand a pupil one object and ask them to estimate it, then say how confident they are before measuring — were they within a centimetre?

PROFICIENT

- Narrate a harder board variant during the Class Challenge: an object whose end falls between two centimetre marks — 'which whole centimetre is it nearest, and how do you decide?' This previews the millimetres lesson without leaving the ruler.

↗ **Cross-curricular:** Tie to PE — pupils estimate then measure the standing-long-jump distance of a chalk mark in centimetres and order the class's jumps.

ANSWER KEY

W1: 49 mm

W2: 4 cm

Q1: 11 cm

Q2: 7.6 cm

Q3: 10.4 cm

Q4: 7 cm

EXTENSION SHEET · STRETCH ANSWERS

S1: 14.6 cm

S2: 24.4 cm

S3: 15 cm

S4: 14.8 cm

S5: 7 cm