Lesson 14 NUMBER

Mental subtraction strategies — count-back and count-up to find the difference

CURRICULUM ALIGNMENT

NUM.OPS.3 understand and apply flexibly the four operations; and the relationships between operations.

INTERACTIVES Number Line Jumps · challenge, display, explore

LESSON ARC

Open cold with 62 − 58 in pupils' heads, then ask how they got it — surface the take-away/count-up split before any number line. On the empty-number-line interactive, model four contrasting pairs, naming the choice before the jump arcs appear. Pupils take turns at the board for Try It Together and Class Challenge, deciding far-apart or close first. The copybook moment has them write the strategy word beside each answer.

TEACHING MOVES

1. **Getting Started.** Put 62 − 58 up and take three hands-up answers — not open call-outs. Ask each pupil 'how did you get it?', not just the answer. You're fishing for the split: 'I took away' versus 'I counted up'. Hold the contrast; it's the whole lesson.
2. **Watch and Notice.** Name the choice — far apart or close — BEFORE the arcs appear on the number-line interactive. Say the recording word the first time each strategy shows: 'took away' for count-back, 'found the difference' for count-up. On 71 − 68, stop and ask 'how many steps from 68 to 71?'
3. **Try It Together.** For each subtraction, ask 'far apart or close together?' first, then let a pupil draw the arcs at the board. Reset the line to a zoomed-in scale for the close pairs (66 − 62, 83 − 78) so the small hops are visible. Revoice a strong answer: 'so because 78 and 83 are nearly touching, counting up is the short way.'
4. **Sort Them in Your Copy.** Pupils work the three sums in their copy and write 'took away' or 'found the difference' beside each. Walk the room glancing at the strategy word, not marking — watch especially for who counts up on 63 − 59 and takes away on 75 − 6.
5. **Class Challenge.** Brisk turns at the board — pupils check each answer and the class confirms before moving on. Ask 'far apart or close together?' before each one, then let them add the jumps. Don't re-explain the arcs; this round is consolidation, not fresh teaching.
6. **What Did We Notice?.** Hold 91 − 88 and 91 − 4 side by side and ask why counting up is quick for one and slow for the other. Listen for pupils naming the GAP between the numbers as the deciding thing. Revoice: 'so we pick the strategy that gives the fewest jumps.'

COMMON MISCONCEPTIONS

⚠ A pupil counts back from 58 in 62 − 58, grinding through fifty-eight hops, because they've decided subtraction always means take-away.

Stop and draw both on the number line: the count-back hops crawling down versus four neat count-up hops from 58 to 62. Ask 'which one would you rather draw?' Let the number of arcs make the point.

⚠ When counting up for 71 − 68, pupils give 68 (where they started) or 71 (where they landed) as the answer instead of the 3 hops they counted.

On the number line, circle the arcs themselves, not the end points. 'The answer is how many jumps we made, not where we stopped.' Re-count the hops aloud together: one, two, three.

⚠ Pupils pick count-up for a far-apart pair like 84 − 30 because they've over-generalised 'counting up is the clever way' from the close examples.

Send them to draw it — let them start hopping up from 30 and feel it get long. Then ask 'far apart or close?' and show the single tidy back-jump of 30 as the short way.

DIFFERENTIATION

EMERGING

- Keep the count-back examples to far-apart pairs with a small take-away (75 − 6) so the hop count is short and the strategy choice is obvious.
- Pre-mark the start and end numbers on the copybook number line so pupils only draw the hops, not the whole scale.

DEVELOPING

- After the copybook sums, ask pupils to find a subtraction where it genuinely doesn't matter which strategy you pick, and explain why.
- Give 81 − 79 then 81 − 2 and ask which strategy suits each — same first number, opposite best choice.

PROFICIENT

- Narrate a harder Class Challenge variant: 100 − 97 versus 100 − 6, and have a pupil justify the gap-size decision aloud to the class.
- Pose: invent a subtraction where the gap is exactly half the bigger number — does either strategy win, or is it a tie? Pair this with a copybook moment.

↗ **Cross-curricular:** Tie to the Irish school day — pupils work out minutes left until little break (e.g. 11:00 − 10:48) and decide if counting up or back is quicker.

ANSWER KEY

Warm-up: a) `7` b) `9` c) `5` d) `7`

Q1: `321`

Q2: `272`

Q3: `5142`

Q4: `2241`