

Mental subtraction strategies within 100

CURRICULUM ALIGNMENT

NUM.OPS.3

understand and apply flexibly the four operations; and the relationships between operations.

INTERACTIVES **Number Line Jumps** · challenge, display, explore

WHAT THIS LESSON TEACHES

To subtract mentally within 100, jump back along the number line from the larger number until the smaller is removed, or count up the small gap when the numbers are close.

→ $47 - 5$: start at 47 and make five small back-jumps to land on 42

→ $52 - 47$: jump up from 47 to 52, a gap of 5, so the answer is 5

MODEL THIS ON THE BOARD

HURLING SCOREBOARD 53 - 48

- 1 The numbers are close so count up the gap instead of jumping back 48.
- 2 Start at **48** and jump forward to **53**.
- 3 Count the gap of **5**. So $53 - 48 = 5$.

DISCUSSION STARTER

REFLECT Did you prefer counting back or counting up the gap? When is each easier?

LESSON ARC

Open with the hurling-scoreboard subtraction $53 - 48$ on the IWB and take hands-up on which route pupils would pick — don't resolve it yet. Walk four worked examples on the number-line-jumps interactive, pivoting on the key move in $52 - 47$: the answer is the length of the gap, not the landing number. Pupils mark their route choice and reason in copybook. The Class Challenge bank then runs from far-apart to close pairs so pupils spot when counting up wins.

TEACHING MOVES

1. **Getting Started.** Display $53 - 48$ and give five seconds of silent think-time before any hands go up. Take two or three answers but don't say which route is better — you want pupils to notice for themselves that jumping back forty-eight times is a lot of work when the numbers are this close.
2. **Watch and Notice.** Run all four on the number-line-jumps interactive, slowing right down on $52 - 47$. Before revealing the count-up jump, ask 'why would counting back forty-seven be silly here?' Then land the key line: 'the answer is hiding in how far we jumped' — five, not the landing number 52.
3. **Try It Together.** Run only $46 - 4$ on the board interactive; call the other three ($80 - 20$, $63 - 58$, $71 - 67$) aloud as a class, sketching with the IWB pen if you want a visual. Before each, ask 'far apart or close together?' and revoice a good choice. Watch for pupils reading the landing number instead of the gap — catch it with 'how far did we jump?'
4. **Mark Your Choice in Your Copy.** Pupils write $52 - 47$, $60 - 30$ and $84 - 79$ down their copy and note route plus a one-word reason beside each. Walk the room glancing for pupils naming 'close together' or 'small gap' as their reason for counting up — that reasoning is the lesson's real target.

5. **Class Challenge.** Pupils take turns at the board through $38 - 6$, $70 - 30$, $61 - 58$, $95 - 88$; the class confirms each with the Check button before moving on. Keep it brisk. For each close pair ask 'is the gap small enough to count up?' before the pupil starts — don't re-explain the strategy.
6. **What Did We Notice?.** Pose the claim that counting up can't really be subtracting because you're adding jumps. Steer pupils to where the answer hides: revoice that the three steps from 58 up to 61 ARE the answer to $61 - 58$, not the landing number.

COMMON MISCONCEPTIONS

⚠ On a count-up subtraction, pupils read the landing number as the answer — for $61 - 58$ they say 'sixty-one' instead of the gap of 3.

Stop and ask 'how far did we jump?' and re-trace just the forward hops on the number-line-jumps interactive, counting them aloud: one, two, three. The jumps you counted ARE the answer; the number you landed on is not.

⚠ Pupils default to counting back for everything, so for $95 - 88$ they start eighty-eight tiny back-hops instead of spotting the small gap.

Pause before the pupil starts and ask 'far apart or close together?' Show on the number line how few jumps the count-up route needs versus the long crawl of counting back eighty-eight. Let the contrast in jump-count make the case.

DIFFERENTIATION

EMERGING

- Stay with the far-apart, small-take-away type ($47 - 5$, $38 - 6$) where counting back always works, so the route decision is removed for now. Pupils mirror the back-jumps in copybook.
- Pre-mark the start number on the number-line-jumps interactive so the pupil only counts and reads the jumps, not sets up the line.

DEVELOPING

- After the copybook moment, give a pair where the gap is borderline (e.g. $72 - 64$) and ask: count back or count up here, and how do you know it's worth it?
- Pose a missing-number form: $61 - ? = 3$ — work it on the number line and explain which strategy you used.

PROFICIENT

- While the Class Challenge runs, narrate a harder variant aloud to fast finishers — $103 - 97$ crossing the hundred — and ask whether the count-up rule still holds across a hundreds boundary.
- Ask them to write a rule a younger pupil could follow for deciding count back versus count up, then test it on two of the lesson's subtractions.

✂ **Cross-curricular:** Tie to PE or GAA — pupils find the points gap between two hurling or camogie scoreboard totals by counting up the difference.

ANSWER KEY

Scaffold: visual check on the page

Q1: 50 points

Q2: 32 scores

Q3: 40 sliotars

Q4: 5 points

Q5: 5 points

Q6: 3 points

a) **Always** : The lesson shows counting up is quicker for close pairs like $84 - 79$.

b) **Never** : Counting up the gap also works: for 52 take away 47, count up 3 to 50, then 2 more, so 5.

c) **Always** : The size of the gap is exactly the answer to the subtraction.

d) **Sometimes** : True for 52 take away 2; false for 52 take away 30, where jumping back in tens is quicker.

EXTENSION SHEET · STRETCH ANSWERS

S1: 5142

S2: 272

S3: 321

Investigation: Gap or count-back? — open-ended; scan pupils' working for valid solution paths rather than a single answer.