

## Mental addition strategies – partition, count-on, near-doubles

### CURRICULUM ALIGNMENT

**NUM.OPS.3**

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

### INTERACTIVES

Number Line Jumps · challenge, display

Hundred Square · explore

### LESSON ARC

Open by asking the class to do  $38 + 27$  in their heads, then harvest three different methods and name them on the board: partition, count-on, near-double. The Watch and Notice demo runs four sums as number-line jumps, with  $35 + 36$  carrying the genuinely new near-double idea. Pupils count on along the hundred square together, then write three sums in copybook naming the strategy beside each. The Class Challenge bank reaches three ten-crossing targets by chosen jumps.

### TEACHING MOVES

- Getting Started.** Give five seconds of silent think-time before hands go up. Deliberately take three pupils who used different methods, not three the same, and name each strategy back on the board – partition, count-on, near-double. No working shown yet; this is just surfacing what they already do.
- Watch and Notice.** Walk each number-line example aloud, pointing to each arc and where it lands. On  $35 + 36$ , ask the class for double 35 BEFORE placing the first jump, then label that  $+35$  arc 'double  $35 = 70$ ' so they see the known fact doing the work. Say out loud that we never split 36 into tens and units – that's what separates a near double from partition.
- Try It Together.** Remind the class up front: down a row on the hundred square is  $+10$ , along is  $+1$ . Take one pupil to the board per sum – three turns. After each, ask 'how many rows down, and why?' and revoice the path: 'for  $53 + 19$  we stepped down one row to 63, then along nine to 72.' Watch for pupils counting only in ones – nudge them to step a whole row.
- Work It in Your Copy.** Walk the room glancing at the strategy name beside each answer – this is practice, not marking. Watch specifically for  $39 + 39$  being spotted as a near double and  $58 + 6$  handled as a count-on that bridges 60. If a pupil names partition for  $58 + 6$ , ask which way needs fewer jumps.
- Class Challenge.** Brisk practice – one pupil to the board per sum, checks the answer, class confirms, move on. For each target ask the pupil to choose their jumps before placing them: 'which jump crosses a ten, and why does that make it trickier?' Don't re-teach each one – keep it to confirming the strategy choice.
- What Did We Notice?.** Display-only talk. Listen for pupils naming the size of the second number as the deciding factor – count-on for adding something small like  $58 + 6$ , partition for two-digit-plus-two-digit. Revoice: 'so the numbers in front of you decide which strategy is fastest, not a fixed rule.'

## COMMON MISCONCEPTIONS

⚠ Asked for a near double, a pupil does  $35 + 36$  by splitting 36 into 30 and 6 — they've quietly slid back into partition and lost the point of using the known double.

Pause and put both number lines side by side on the IWB: the partition version (+30, +6) and the near-double version (+35 labelled 'double 35 = 70', then +1). Ask which one used a fact they already knew. The near double does the heavy lifting in one jump.

⚠ On the hundred square a pupil counts  $53 + 19$  entirely in single steps along the rows instead of dropping a whole row of ten.

Stop and point: drop straight down one row — that's a +10 in a single move. Have the pupil redo  $53 + 19$  as 'down one row to 63, then along nine to 72' so the ten-jump replaces ten single steps.

⚠ For  $46 + 9$  a pupil jumps +6 instead of +4, missing the tidy 50 and landing awkwardly mid-row.

Ask aloud 'how far to the next tidy ten from 46?' before any jump goes on. Place the +4 to 50 first, then the +5. Bridging to the ten is what keeps both jumps easy.

## DIFFERENTIATION

### EMERGING

- Keep these pupils on the hundred square for the copybook sums too — let them point and step rather than work the number line abstractly.
- Stick to count-on with a small second number (like  $58 + 6$ ) before asking them to choose between strategies; name the one strategy for them so the choosing load comes off.

### DEVELOPING

- After the copybook sums, hand them  $49 + 49$  and ask whether near double or partition gets there in fewer jumps — and to justify the count.
- Ask them to solve  $67 + 28$  two different ways on the number line and say which felt quicker for those particular numbers.

### PROFICIENT

- Narrate a harder variant of the current Class Challenge target — try  $78 + 46$  — and ask them to pick the strategy and defend it before jumping, or pull them ahead into the Student Activity Book page.
- Pose: 'invent an addition where near double is clearly the best choice, and one where it's clearly the worst.' Have them write both in copybook with a one-line reason for each.

↗ **Cross-curricular:** Tie to PE — pupils tally points scored by two relay teams across rounds and add the running totals in their heads, naming the strategy they used.

## ANSWER KEY

Warm-up: a) 8 b) 5 c) 3 d) 5

Q1: 819

Q3: 11914

Q2: 1662

Q4: 2241