

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.

NUM.PVT.3

explore equivalent numerical expressions of numbers using the base ten system.

INTERACTIVES [Number Line Jumps · challenge, display, explore](#)

LESSON ARC

Open with $38 + 27$ in pupils' heads, then surface two or three methods aloud without ranking them. On the empty-number-line interactive, draw jump arcs for partition, count-on and near-double, naming each as the arcs appear. Pupils take turns at the board for $48 + 23$, $27 + 29$ and $55 + 8$, saying their strategy before they jump. Copybook practice has three sums with the strategy name written beside each answer.

TEACHING MOVES

- Getting Started.** Give five seconds of silent think-time before any hands, then take two or three different methods — not repeats of the same one. Jot each on the board and quietly name it. Don't fish for near double here: 38 and 27 aren't near-twins, so it won't fall out naturally.
- Watch and Notice.** Walk each example one at a time on the number-line interactive, naming the strategy as the arcs draw. For count on, ask why 50 is a friendly place to stop. For near double, ask what pupils notice about 35 and 36 before you reveal the jumps — the 'almost twins' spotting is the whole point. Don't move on until pupils can name which strategy suits which kind of sum.
- Try It Together.** Reset the interactive's start point for each sum (48, then 27, then 55) before the pupil draws. On $48 + 23$, name both the bridge-through-50 route and the partition route as correct. On $27 + 29$ revoice 'so 29 is just one less than 30'. Let the pupil pick and draw first, then the class confirms the landing number.
- Work It in Your Copy.** Walk the room glancing at the strategy name beside each answer — the label matters as much as the total. Watch for $39 + 39$ being spotted as a clean double (78) and $58 + 6$ counted on through 60.
- Class Challenge.** Keep the board work brisk — one pupil at a time, class predicts the landing number before they press Check. For the bigger sums that cross a ten (or $89 + 46$ crossing a hundred), narrate which jump crosses the boundary, but let pupils pick the route that fits rather than re-explaining each one.
- What Did We Notice?.** Listen for pupils linking strategy choice to the numbers: count on for one small or near-ten number ($46 + 9$), partition for two chunky numbers ($38 + 27$). Revoice a strong answer: 'so you pick the strategy that fits the numbers, not the same one every time.'

COMMON MISCONCEPTIONS

⚠ A pupil partitions $48 + 23$ as $+20$ then $+3$ but loses track mid-jump — they land on 68 (forgot to add the 3) or write 711 by sticking the tens and units together.

On the interactive, make the pupil draw both arcs and read each landing number aloud — 48, then 68, then 71. The two visible hops stop them from collapsing the steps into a digit-jam.

⚠ Pupils name a strategy that doesn't match what they actually did — they write 'near double' beside $47 + 25$ because the numbers look close, when there's no twin to double.

Ask 'what's the double you used, and what did you adjust by?' If they can't answer, the label is wrong. Point back to $35 + 36$ on the board — near double needs almost-twins, not just two two-digit numbers.

⚠ When a sum crosses into a new ten ($48 + 35$), pupils stall at the boundary or hop past it then can't say where they are.

Draw the bridging hop explicitly on the interactive — $48 + 2$ reaches 50, mark 50, then continue. Naming the friendly ten as a stopping post turns the trickiest moment into the tidiest.

DIFFERENTIATION

EMERGING

- Stay with partition only on the interactive while the class meets all three strategies — one named method drawn cleanly beats three half-grasped ones.
- In the copybook, give $58 + 6$ first (one small number, an easy count-on to 60) before the chunkier two-digit sums.

DEVELOPING

- After the copybook page, ask a pupil to solve $47 + 25$ a second way and say which route was quicker for them — and why.
- Pose a missing-number variant: $39 + ? = 76$, drawn on the number line, before they reach the Class Challenge.

PROFICIENT

- Hand them $89 + 46$ from the Class Challenge early and ask them to solve it two ways — partition and count-on — then argue at the board which fits these numbers best and justify it to the class.

➤ **Cross-curricular:** Tie to PE — pupils total two lap distances around the yard in metres (e.g. $38\text{ m} + 27\text{ m}$) and name the mental strategy they used.

ANSWER KEY

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

Q1: 819

Q3: 11914

Q2: 1662

Q4: 63