

Our subtraction toolkit: module review and facts round-up

CURRICULUM ALIGNMENT

NUM.OPS.2

select, make use of and represent a range of addition and subtraction strategies.

INTERACTIVES

Number Line Jumps · display

Memory Match · explore

Fact Race · challenge

WHAT THIS LESSON TEACHES

We have three tools for take-aways: counting back, back through ten, and counting up. Pick the tool that makes each sum quickest.

→ $17 - 2$: two little jumps back land on 15.

→ $12 - 5$: back 2 to land on 10, then back 3 to land on 7.

MODEL THIS ON THE BOARD

13 TAKE AWAY 9 BY COUNTING UP

- 1 Start at 9 on the number line.
- 2 Count up: 10, 11, 12, 13.
- 3 You made 4 jumps, so $13 - 9 = 4$.

LESSON ARC

Open with the three strategy cards on the board and pose $13 - 9$; take tool choices without settling the answer. Demo three number-line take-aways — $17 - 2$ counting back, $12 - 5$ back through ten, $11 - 9$ counting up — holding up the matching card each time. Pupils match fact-pairs at the IWB, then write one proud fact in copybook. Class Challenge races four facts with a tool named before each answer. Student Activity Book page 38 is the desk practice.

TEACHING MOVES

1. **Getting Started.** Pin the three labelled tool cards — counting back, back through ten, counting up — where the class can see them. Pose $13 - 9$ and take three hands-up tool choices; do not reveal which is best yet.
2. **Watch and Notice.** Before each number-line demo, pause and ask ‘which tool would you reach for?’ Then show the jumps: two little hops back for $17 - 2$; stop-at-ten then the rest for $12 - 5$; start on 9 and count the gap for $11 - 9$. Hold up the matching card after each one.
3. **Try It Together.** Rotate four pupils at the board to turn cards and call Match! After every pair, ask the class which tool unlocks that fact fastest — listen for the three strategy names, not just the answer.
4. **Write your proudest fact.** One quiet minute: pupils write a single take-away sentence they know by heart. Walk the rows for neat number sentences only — this is practice, not marking.
5. **Class Challenge.** Keep the board work brisk. Pupil at the board names a tool, gives the answer, class confirms with the Check tick, move on. Cue once per fact: $17 - 2$ often counting back; $12 - 5$ and $14 - 6$ often back through ten; $11 - 9$ often counting up.
6. **What Did We Notice?.** Ask which tool is their favourite and when it wins. Re-voice reasons — ‘so counting up wins when the numbers are close’ — and head off ‘always count back’.

COMMON MISCONCEPTIONS

⚠ Pupils always reach for counting back, even on $11 - 9$, and end up making nine jumps instead of two. Put $11 - 9$ back on the number line. Show nine hops back beside two hops up from 9, and ask which path is shorter. Re-voice: close numbers often suit counting up.

⚠ On back-through-ten, pupils jump the whole take-away in one go past ten, or split the wrong way (e.g. $12 - 5$ as -3 then -2).

Freeze the number line at 10. Ask 'how many did we already take to land on ten?' then 'how many are still left to take?' Rebuild $12 - 5$ as -2 to 10, then -3 to 7.

⚠ When counting up, pupils include the starting number in the gap count, so $11 - 9$ becomes 3 instead of 2.

Start the finger on 9 and only count the landing spots: 10, then 11. 'Two landings — the gap is 2.'

DIFFERENTIATION

EMERGING

- Keep the first two Class Challenge facts on the number-line interactive with the jumps already half-drawn; pupil only names the tool and finishes the last hop.
- Accept a spoken proud fact if the copybook sentence stalls — teacher scribes the number sentence for them.

DEVELOPING

- After a Class Challenge match, swap the fact (e.g. $14 - 6$ becomes $14 - 8$) and ask whether the same tool still wins, and why.
- On the proud-fact copybook line, add one more: write a second fact that needs a different tool from the first.

PROFICIENT

- Before each Class Challenge answer, ask them to name a second tool that would also work and say which is faster.
- Stretch prompt at the board: 'find a take-away within 20 where counting back is slowest — prove it on the number line.'

✂ **Cross-curricular:** Tie to PE scoring — teams track points taken off a starting total of 20 and name the tool before each take-away.

ANSWER KEY

Scaffold: visual check on the page

Q1: 16 glue sticks

Q2: 2 chairs

Q3: 6 crayons

Q4: 8 workbooks

Q5: 3 paint pots

Q6: 7 stickers

a) Always : Small jumps back are fast for tiny take-aways.

b) Always : You land on ten then finish the rest of the jumps.

c) Never : Counting up only needs four steps so it is quicker.

d) Sometimes : It is often quickest then but other tools may still work well.

EXTENSION SHEET · STRETCH ANSWERS

S1: 11

S2: 7

S3: 7

S4: 8