

Adding and subtracting mixed numbers

CURRICULUM ALIGNMENT

NUM.OPS.4

build upon, select and make use of a range of operation strategies.

NUM.FRC.4a

explore (model, compare and convert) the relationships between fractions, decimals and percentages.

INTERACTIVES **Number Line** · display, explore

WHAT THIS LESSON TEACHES

A mixed number combines a whole number and a fraction, such as $2\frac{1}{2}$. Add or subtract by handling wholes and fractions separately, carrying or borrowing when fractions exceed 1 or go negative.

→ $2\frac{1}{2} + 1\frac{1}{4}$ makes $3\frac{3}{4}$

→ $3\frac{3}{4} - 1\frac{1}{2}$ makes $2\frac{1}{4}$

MODEL THIS ON THE BOARD

ADDING ON THE NUMBER LINE

- 1 Start at $2\frac{1}{4}$ and add the whole 1 to reach $3\frac{1}{4}$
- 2 Add the fraction $\frac{1}{2}$ to land at $3\frac{3}{4}$

ANSWER KEY

Scaffold: visual check on the page

Q1: $3\frac{3}{4}$ litres

Q2: $3\frac{3}{4}$ cups

Q3: $2\frac{1}{4}$ metres

a) **Always** — The wholes and fractions both increase the total.

b) **Sometimes** — Borrowing happens only when the top fraction is smaller than the bottom one.

c) **Never** — They can add to more than one, requiring a carry over.

d) **Never** — Borrowing can reduce the whole number by one.

EXTENSION SHEET · STRETCH ANSWERS

S1: $2\frac{5}{16}$

S4: 3

S2: $27/20$

S5: $17/30$

S3: $7\frac{2}{5}$