

Lesson 37 **NUMBER**

Adding and subtracting fractions with different denominators

CURRICULUM ALIGNMENT

NUM.FRC.4a

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

NUM.OPS.4

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

INTERACTIVES **Fraction Strips** · challenge, display, explore

WHAT THIS LESSON TEACHES

To add or subtract fractions with different denominators, rewrite both over a shared number of equal parts so the pieces are the same size and can be counted together.

→ $1/3$ and $1/4$ both re-write over twelfths: $4/12$ and $3/12$.

→ $1/3 = 4/12$ (multiply top and bottom by 4).

MODEL THIS ON THE BOARD

PIZZA SLICES ADDED

- 1 Find a common denominator for $1/3$ and $1/4$. Twelfths work because $3 \times 4 = 12$.
- 2 Rewrite $1/3$ as $4/12$ by multiplying top and bottom by 4.
- 3 Rewrite $1/4$ as $3/12$ by multiplying top and bottom by 3.
- 4 Add the rewritten fractions: $4/12 + 3/12 = 7/12$.

ANSWER KEY

Scaffold: visual check on the page

Q1: $9/20$

Q2: $3/4$ kg

Q3: $1/3$ litre

a) Always : A shared denominator makes the pieces the same size so they can be added.

b) Sometimes : The product always works but a smaller common multiple is enough when one denominator already fits the other.

c) Sometimes : True for $1/4 + 1/4 = 2/4 = 1/2$; false for $1/4 + 2/4 = 3/4$.

d) Never : Denominators are never added; a common multiple is used instead.

EXTENSION SHEET · STRETCH ANSWERS

S1: $25/18$

S2: $13/28$

S3: $17/12$

S4: $13/10$

S5: $17/30$