Fluency 1

$$\frac{2}{7} + \frac{3}{7} = \frac{5}{7}$$

When we add fractions, we add the **numerators** but **the denominators** stay the same.

$$\frac{5}{8} + \frac{2}{8} = \frac{7}{8}$$

$$\frac{3}{10} + \frac{5}{10} = \frac{8}{10}$$

Fluency 2

$$\frac{4}{6} + \frac{2}{6} = \frac{6}{6}$$

$$\frac{2}{8} + \frac{2}{8} + \frac{3}{8} = \frac{7}{8}$$

Fluency 3

They ran $\frac{9}{10}$ in total.

Reasoning 1

Pupil responses should show that Jerry has made a mistake

Modelled DAB Reasoning Responses

D – Jerry has made a mistake

A – $\dfrac{3}{9} + \dfrac{4}{9}$ does not equal $\dfrac{7}{18}$

B – Jerry has added the denominators as well as the numerators. The answer should be:

$$\frac{3}{9} + \frac{4}{9} = \frac{7}{9}$$

Here is a bar model to prove it.

Reasoning 2

Modelled DAB Reasoning Response

D – There is an odd one out

A – The odd one out is $\dfrac{3}{10} + \dfrac{6}{10}$

B – This is the odd one out as it is the only one that doesn't equal a whole number.

$$\frac{3}{10} + \frac{6}{10} = \frac{9}{10}$$

$$\frac{3}{9} + \frac{6}{9} = \frac{9}{9}$$

$$\frac{5}{12} + \frac{7}{12} = \frac{12}{12}$$

Reasoning 3

Modelled DAB Reasoning Response

D – The calculation is correct

A – $\frac{3}{11} + \frac{7}{11} = \frac{10}{11}$

B – If you add the numerators only, 3 + 7 = 10 so the numerator is 10. We don't add the denominator so the denominator stays 11. This shows that

$$\frac{3}{11} + \frac{7}{11} = \frac{10}{11}$$

The bar model also shows this:

Reasoning 4

Pupil responses should show that Anita and Jane are both incorrect

Modelled DAB Reasoning Response

D – They are both incorrect

A – The missing fraction is not $\frac{5}{8}$ or $\frac{4}{7}$

B – If we have $\frac{3}{8}$ and we want to get the answer of $\frac{7}{8}$, we count up from 3 to 7, which is 4. The denominator stay the same. This means that the missing fraction is $\frac{4}{8}$

$$\frac{3}{8} + \frac{4}{8} = \frac{7}{8}$$

The bar model proves this:

Problem Solving 1

There are 3 options:

$\frac{8}{15}$ are chickens and $\frac{5}{15}$ are cows

$\frac{10}{15}$ are chickens and $\frac{3}{15}$ are cows

$\frac{12}{15}$ are chickens and $\frac{1}{15}$ are cows