Stage 8

Proportional

Stage 8

Proportional Strategies

Finding fraction of a quantity

$^4/_5$ of 27 = ☐

Because 5 does not go into 27 easily, I could use a decimal strategy instead

$^4/_5 = 0.8$

(0.1 × 27 = 2.7 so 0.2 is double 2.7 = 5.4)

27 − (0.2 × 27) → 27 − 5.4 = 21.6

so $^4/_5$ of 27 is 21.6

Stage 8

Proportional Strategies

Finding decimals of a quantity

0.55 × 0.7 = ☐

Instead of using a decimal strategy I can use a percentage strategy → 0.55 = 55%

50% of 0.7 = 0.35 and 5% is 0.035

To find the answer, I need to add 0.35 to 0.035

so 0.55 × 0.7 = 0.385

Stage 8

Proportional Strategies

Finding percentages of a quantity

65% of 36 = ☐

This time I will break each part of the percentage into pieces to make it easier → 50% + 10% + 5%

So, 50% of 36 is 18, 10% is 3.6 and 5% is 1.8

Now recombine

18 + 3.6 + 1.8 = 23.4

so 65% of 36 is 23.4

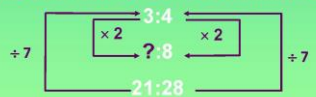
Stage 8

Proportional Strategies

Finding equivalent ratios

21:28 = ?:8

To find the equivalent ratio I am going to first simplify the ratio by using a common factor



Now I will use multiplication to make an equivalent ratio

So 21:28 = 6:8

Stage 8

Proportional Strategies

Finding a multiplier between the units

How long will a car take to travel 20km if it travels at a constant rate of 12km in 27 minutes?

To find the missing quantity I need to find the relationship between 12km and 20km. I can see that 20km is 8km larger than 12km, or $^8/_{12}$ or $^2/_3$

So our multiplier is $^2/_3$

If 12km + (12km × $^2/_3$) = 12km + 8km = 20km,

then 27min + (27mins × $^2/_3$) = 27mins + 18mins = 45mins

So it takes the car 45mins to travel 20km