

Stage 7

Proportional

Stage 7

Proportional Strategies



Use unit fractions

$$\frac{5}{7} \times 35 = \square$$

Rewrite as ...

$$(\frac{1}{7} \times 35) \times 5$$

$\frac{1}{7} \times 35$ is the same as $\frac{1}{7}$ of 35, or $35 \div 7$

$$35 \div 7 = 5, \text{ so } \frac{1}{7} \times 35 = 5$$

Now multiply the answer by 5 to get $\frac{5}{7}$, (5×5)

$$\text{so } \frac{5}{7} \times 35 = 25$$

Stage 7

Proportional Strategies



Use place value

$$4.3 \times 6 = \square$$

Expand the decimal number into 1s & $\frac{1}{10}$ s and multiply each part separately.

$$(4 \times 6) + (0.3 \times 6) =$$

Now solve and recombine

$$24 + 1.8 = 25.8$$

$$\text{so } 4.3 \times 6 = 25.8$$

Stage 7

Proportional Strategies



Compensating from tidy numbers

$$2.9 \times 5.3 = \square$$

Create a tidy number $3 \times 5.3 = 15.9$

Now compensate $15.9 - (0.1 \times 5.3)$

$$15.90 - 0.53 = 15.37$$

$$\text{so } 2.9 \times 5.3 = 15.37$$

Stage 7

Proportional Strategies



Compensating from fractions

$$\frac{3}{8} \times 36 = \square$$

When the denominator cannot be easily divided into your whole number, then you can use an easier related fraction that does fit in easily — $\frac{3}{4} \times 36$

Since $\frac{1}{4}$ of 36 is 9, then $\frac{3}{4}$ of 36 must be 9×3 (27), since $\frac{3}{4}$ is twice as big as $\frac{3}{8}$, we now need to halve the answer to get $\frac{3}{8}$ — so $\frac{1}{2}$ of 27 is 13.5

$$\text{so } \frac{3}{8} \times 36 = 13.5$$

Stage 7

Proportional Strategies



Using equivalent fractions

$$60\% \text{ of } 45 = \square$$

Change the percentage into a fraction

$$60\% = \frac{60}{100} = \frac{6}{10} = \frac{3}{5}$$

Use your fraction strategies to solve

$$\frac{3}{5} \text{ of } 45 \text{ is } (45 \div 5) \times 3 \text{ which is } 9 \times 3 = 27$$

$$\text{so } 60\% \text{ of } 45 = 27$$

Stage 7

Proportional Strategies



Using equivalent ratios

$$75\% \text{ of } 56 = \square$$

Change the percentage into a ratio

$$\text{If } 3:1 = 4$$

$$\text{Then what is } ? : ? = 56$$

I can see that 56 is 14 times bigger than 4, so I need to multiply each part of my ratio by 14

$$\text{so } 75\% \text{ of } 56 \text{ is } 42$$