

# Maths Mastery

Solve Problems Using Multiplication and  
Division Including Scaling and Rates



# Scaling

Here is a recipe for biscuits:

90g flour

50g butter

60g seeds

30ml water



Nigel has 100g of butter to make some biscuits.  
How much flour, seeds and water will be needed?

**180g flour, 120g seeds, 60ml water.** 100g of butter is  $2 \times 50\text{g}$  butter, so the recipe needs to be doubled.

Explain what you needed to do to get the answer and why.

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Answers

# Scaling

Four children take some food and drink on a picnic. They share equally:

24 chocolate sweets

12 rounds of sandwiches

6 oranges

3 bags of crisps

1.5 litres of lemonade

Explain how you can use scaling to calculate how much of each item they receive.

The amount of each item is halved each time.

$24 \div 2 = 12$  chocolate sweets.

Then halve again to find a quarter of the amount.

**6 chocolate sweets**

**3 rounds of sandwiches**

**$1 \frac{1}{2}$  oranges**

**$\frac{3}{4}$  bag of crisps**

**$\frac{3}{8}$  of a litre of lemonade**



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Answers

# Rates

£1 buys \$1.50

A traveller buys £80 worth of dollars. How many dollars will she receive? Explain how you calculated the answer.

Another traveller wants \$180. How much will this cost him in sterling (£)? Explain how you calculated the answer.

Suggest some other conversions for a partner to try.

$$£80 \times 1.5 = 80 + 40 = \mathbf{\$120}$$

or

$$\begin{aligned} &\text{£1 buys \$1.50, £10 buys \$15,} \\ &\text{£10} \times 8 = \text{£80, so } \$15 \times 8 = \\ &\mathbf{\$120} \end{aligned}$$

$$\begin{aligned} \$180 \div 1.5 &= 180 \div 3 \times 2 = 60 \times \\ &2 = \mathbf{£120} \end{aligned}$$

or

$$\begin{aligned} &\text{£1 buys \$1.50, £10 buys \$15,} \\ &\$15 \times 12 = \text{£80, so } \text{£10} \times 12 = \\ &\mathbf{£120} \end{aligned}$$



Hide  
Answers

