Day 178 **C Tier 10-a-day: Model Solutions**

1 Reading a table

The table shows the favourite colour of some children.
Write down the number of children for Yellow.

Read the value under Yellow: 10
Answer: 10

2 Substitution

Work out the value of 8n when n = 7.

8n means 8 × n
8 × 7 = 56
Answer: 56

3 Perimeter and area of a square

A square picture has sides of length 5 mm.
(a) Work out its perimeter.
(b) Work out its area.

(a) A square has 4 equal sides: 4 × 5 = 20
(b) Area = side × side: 5 × 5 = 25
Answer: (a) 20 mm (b) 25 mm^2

4 Equivalent fractions

Find the missing number.

$\frac{1}{10} = \frac{?}{50}$

10 × 5 = 50, so multiply the top by 5 as well
1 × 5 = 5
Answer: 5

5 Duration of a journey

A flight takes off at 11:30 am and lands at 1:05 pm.
How long is the flight?

Count on from 11:30 am to 1:05 pm:
30 minutes to 12:00 pm
1 hour to 1:00 pm
5 minutes to 1:05 pm
Total: 1 hour 35 minutes
Answer: 1 hour 35 minutes

6 Subtracting decimals

Work out 7.9 − 5.7.

Line up the decimal points
7.9 − 5.7 = 2.2
Answer: 2.2

7 Using formulae

The distance, d km, travelled in t hours is given by the formula d = 9t.
(a) Work out the value of d when t = 4.
(b) Work out the value of t when d = 27.

(a) d = 9 × 4 = 36
(b) 9t = 27, so t = 27 ÷ 9 = 3
Answer: (a) d = 36 (b) t = 3

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8 Relative frequency

A biased dice is rolled 200 times. It lands on a six 35 times.
Estimate the probability that it lands on a six next time.
Give your answer as a fraction in its simplest form.

Relative frequency = $\frac{35}{200}$

= $\frac{7}{40}$

Answer: $\frac{7}{40}$

9 Division in context

Each coach holds 25 people.
77 people need a lift.
How many coaches are needed?

77 ÷ 25 = 3 remainder 2
The extra people need another coach
Answer: 4

10 Reading a pie chart

56 children were asked about their favourite animal.
The pie chart shows the results.
How many children chose Cat?

The Cat sector is a quarter of the pie chart
56 ÷ 4 = 14
Answer: 14