Day 121 **C Tier 10-a-day: Model Solutions**

1 Sequences

Here are the first four terms of a sequence.
12, 21, 30, 39
Write down the next term.

The terms go up by 9 each time
39 + 9 = 48
Answer: 48

2 The range

Here are the numbers of goals scored by a team in some matches.
6 3 3 1 0 2 2
Work out the range.

Range = largest value − smallest value
6 − 0 = 6
Answer: 6

3 Fractions of a shape

What fraction of the shape is shaded?

There are 8 equal parts
1 parts are shaded

Fraction shaded = $\frac{1}{8}$

Answer: $\frac{1}{8}$

4 Ratio, finding the other part

At a rescue centre, the ratio of cats to dogs is 4 : 3.
There are 21 dogs.
Work out the number of cats.

21 ÷ 3 = 7 for each part
4 × 7 = 28
Answer: 28

5 Solving equations

Solve 7w = 70

7w means 7 × w, so divide both sides by 7
w = 70 ÷ 7 = 10
Answer: w = 10

6 Perimeter of a regular polygon

A regular pentagon has sides of length 5 cm.
Work out its perimeter.

A regular pentagon has 5 equal sides
5 × 5 = 25
Answer: 25 cm

7 Expected number

The probability that a seed grows is 0.6.
Mia plants 20 seeds.
How many seeds would you expect to grow?

Expected number = probability × number of trials
0.6 × 20 = 12
Answer: 12

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8 Timetables

The table shows the times of two buses.
Jo gets on Bus 1 at Derby.
What time does Jo get to York?

Read along the row for York in the Bus 1 column
Answer: 09:45

9 Perimeter of a square from its area

A square tile has an area of 121 cm^2.
Work out the perimeter of the tile.

Side × side = 121, so the side is 11 cm (because 11 × 11 = 121)
Perimeter = 4 × 11 = 44
Answer: 44 cm

10 The nth term

The nth term of a sequence is 9n.
Write down the first three terms of the sequence.

Put n = 1, 2, 3 into 9n
9 × 1 = 9, 9 × 2 = 18, 9 × 3 = 27
Answer: 9, 18, 27