Day 247 **C Tier 10-a-day: Model Solutions**

1 Tables of values

Complete the table of values for y = 2x + 4.

When x = 0: y = 2 × 0 + 4 = 4
When x = 1: y = 2 × 1 + 4 = 6
Answer: x = 0: y = 4; x = 1: y = 6

2 Money: change

Uzma buys a gift for £17.65.
Uzma pays with a £20 note.
How much change does Uzma get?

Change = £20 − £17.65
2000p − 1765p = £2.35
Answer: £2.35

3 Sampling

Jack wants to find out whether adults like cycling.
Jack asks people at a cycling race.
Give a reason why this sample may be biased.

People at a cycling race are more likely to like cycling
Answer: People at a cycling race are more likely to like cycling

4 24-hour clock

Write 07:05 using am or pm.

Times before 12:00 are am
Answer: 7:05 am

5 Map scales

On a map, 1 cm represents 2 km.
Two towns are 16 km apart in real life.
How far apart are they on the map?

16 ÷ 2 = 8
Answer: 8 cm

6 Division

Work out 144 ÷ 4.

4 × 36 = 144
So 144 ÷ 4 = 36
Answer: 36

7 Simplifying expressions

Simplify 4n + 9 + 5n

Letters: 4n + 5n = 9n
Numbers: 9 on its own
Answer: 9n + 9

8 Volume and surface area of a cube

A cube has sides of length 5 m.
(a) Work out the volume of the cube.
(b) Work out the total surface area of the cube.

(a) Volume = 5 × 5 × 5 = 125
(b) Each face is a square of area 5 × 5 = 25
A cube has 6 faces: 6 × 25 = 150
Answer: (a) 125 m^3 (b) 150 m^2

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9 Forming and solving equations

There are x children in a club.
5 children leave.
There are now 20 children in the club.
(a) Write down an equation using x.
(b) Solve your equation to find how many children were in the club at first.

(a) $x - 5 = 20$
(b) $x = 20 + 5 = 25$
Answer: (a) $x - 5 = 20$ (b) $x = 25$

10 Area of a triangle

The diagram shows a triangle.
Work out the area of the triangle.
The diagram is not drawn accurately.

Area of a triangle = base × height ÷ 2
12 × 4 = 48
48 ÷ 2 = 24
Answer: 24 m^2