**Day 285** **C Tier 10-a-day: Model Solutions**

## 1 Tally charts

The tally chart shows the favourite sport of some students.
How many more students for Golf than for Hockey?

Golf: 13 Hockey: 2
13 − 2 = 11
**Answer: 11**

## 2 Writing expressions

Max is y years old.
Jon is 6 years younger than Max.
Write an expression for Jon's age.

6 years younger means take away 6: y − 6
**Answer: y − 6**

## 3 Negative numbers: temperature

The temperature is −6°C.
It rises by 3°C.
What is the new temperature?

−6 + 3 = −3
**Answer: −3°C**

## 4 Estimating measurements

Which is the best estimate for the mass of a bag of sugar?
1 g 100 kg 1 kg 10 kg

A bag of sugar is a standard kilogram
The best estimate is 1 kg
**Answer: 1 kg**

## 5 Powers

Work out $10^4$.

$10^4 = 10 \times 10 \times 10 \times 10$
$= 10000$
**Answer: 10000**

## 6 Volume of a cuboid

The diagram shows a cuboid.
Work out the volume of the cuboid.
The diagram is not drawn accurately.

Volume = length × width × height
7 × 5 × 5
7 × 5 = 35, then 35 × 5 = 175
**Answer: 175 $cm^3$**

## 7 Pattern sequences

The diagram shows the first three patterns in a sequence made by Femi.
Each pattern is made from dots.
How many dots are in Pattern 6?

Pattern n is n rows of (n + 1): 1 × 2, 2 × 3, 3 × 4
Pattern 6 is 6 × 7 = 42
**Answer: 42**

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## 8 Pie chart angles

45 students were asked about their favourite subject.
8 of them chose science.
The results are shown in a pie chart.
Work out the angle of the sector for those students.

360° ÷ 45 = 8° for each student
8 × 8° = 64°
**Answer: 64°**

## 9 Simplifying fractions

Write $\frac{20}{25}$ in its simplest form.

Divide the top and bottom by 5
$\frac{20}{25} = \frac{4}{5}$

**Answer:** $\frac{4}{5}$

## 10 Simplifying expressions

Simplify 8c + 2 − 6c

Letters: 8c − 6c = 2c
Numbers: 2 on its own
**Answer: 2c + 2**