Surface area: fact sheet

Planner week 15 · Learn these facts

What it is

the area of all the faces added

Like the wrapping paper

Units²

Cube

$6 \times \text{side}^2$

side 5: $6 \times 25 = 150$ cm²

6 identical squares

Cuboid

$2 \times (lw + lh + wh)$

3 pairs of faces

Front & back, top & bottom, sides

Back from a cube

150 ÷ 6 = 25

√25 = 5 cm

volume 125 cm³

Divide by 6, then square root

Pyramid

base + 4 triangles

$36 + 4 \times \frac{1}{2} \times 6 \times 5$

Use the slant height

Cylinder

2 circles: $2\pi r^2$

curved: $\pi \times d \times h$

The curve unrolls to a rectangle

Sphere

$4\pi r^2$

Formula is given

Units

Surface area	cm², m²
Volume	cm³, m³

Key words

- **Surface area** the total area of every face
- **Net** the 3-D shape opened out flat
- **Face** a flat surface
- **Curved surface** the round side of a cylinder

Exam tips

- List every face before you add.
- Cuboids come in pairs: work out 3 faces and double.
- Surface area is in cm², volume in cm³.
- Cube from surface area: ÷ 6, then √.
- Cylinders: don't forget the top and bottom.
- Paint questions: area ÷ cover, then round up.

Surface area: fact sheet

Surface area · Planner week 15 · Learn the method

Worked example

QUESTION

Work out the surface area of a cuboid 6 cm long, 5 cm wide and 3 cm high.

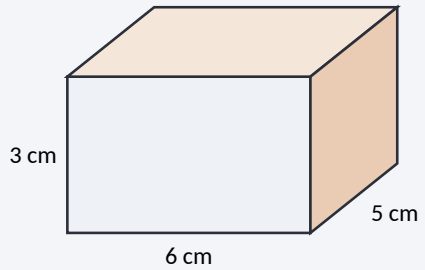

Diagram NOT accurately drawn

ANSWER

1. There are three different faces: 6 × 5 = 30, 6 × 3 = 18, 5 × 3 = 15
2. Add them: 30 + 18 + 15 = 63
3. Each face appears twice: 63 × 2

126 cm²

Three different faces, each one twice.

How to do it

1. Sketch the net or list the faces.
2. Find the area of each face.
3. Cuboid: three pairs, so double.
4. Add them all up.
5. Units²: cm² or m².

Model answer:

126 cm²

Watch out

- Working out the volume instead.
- Only counting 3 faces.
- Using the vertical height for a pyramid triangle.