

AN INTRODUCTION TO SURFACE AREA

Surface area is the sum of the areas of all the faces, or surfaces, of a three-dimensional object. To find surface area, you can use a **net**, which is a drawing of what the shape would look like if it were flattened out. This allows you to see all the faces at one time.

To find the surface area of a rectangular prism or cube, find the area of each face. Then add the areas of all the faces to find the surface area of the object.

In this example, each face on the rectangular prism is a rectangle. Find the area of all six faces.

$3 \times 2 = 6 \text{ cm}^2$ $3 \times 2 = 6 \text{ cm}^2$
 $3 \times 6 = 18 \text{ cm}^2$ $3 \times 6 = 18 \text{ cm}^2$
 $2 \times 6 = 12 \text{ cm}^2$ $2 \times 6 = 12 \text{ cm}^2$

Once you have found the area of each face, add all the areas together.

$$6 + 6 + 18 + 18 + 12 + 12 = 72 \text{ cm}^2$$

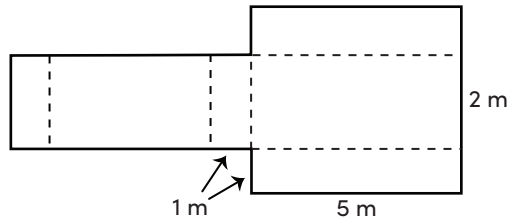
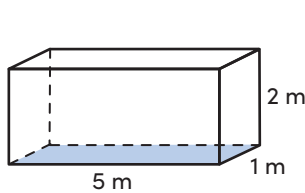
So, the surface area of the rectangular prism is 72 cm^2 .

Find the surface area of the shape.

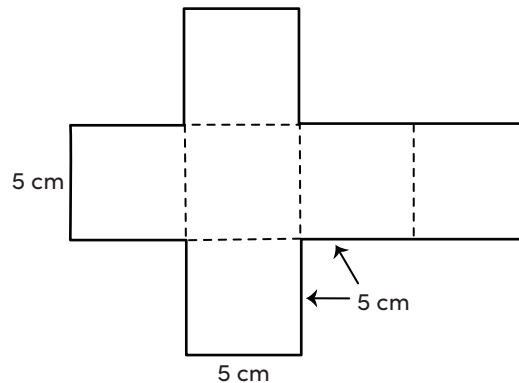
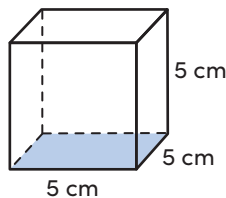
surface area = 54 in.²

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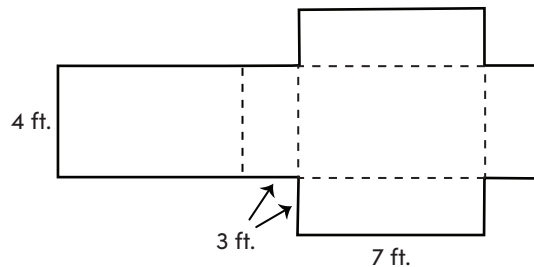
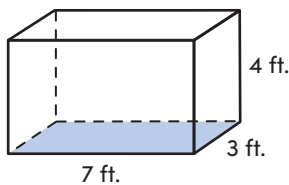
Keep going! Find the surface area of the shapes.



surface area = 34 m²



surface area = 150 in.²



surface area = 122 ft.²

If you know the width (w), length (l), and height (h) of a rectangular prism or cube, you can use this formula to find the surface area:

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

Choose one of the problems from above to explain why this formula works. **Student answers will vary.**

When you calculate the area of each face, there ends up being two of each face. So, you
can double each of those areas.