

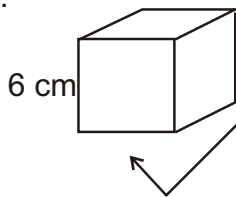
Surface Area Of Cubes and Rectangular Prisms

It is important that you first know how to find the area of one rectangle or a square before you find the surface area of a cube or a rectangular prism.

To find the surface area of a cube or a rectangular prism, you will have to find the area of each of the object's six sides, and then add them together.

To find the surface area of a cube requires less steps than to find the surface area of a rectangular prism. All six sides of a cube have exactly the same area. After you find the area of one of the sides, multiply that number by six. The resulting number will be the surface area of that cube.

Example:



First, find the area of one side. $A = (\text{Length})(\text{Width})$

$$A = (6)(6)$$

$$A = 36 \text{ cm}^2$$

← NOT THE ANSWER! ONLY THE AREA OF ONE SIDE!

Because all sides of a square are equal, we know that each side is the same length. Even though they only gave us the length of 6 cm in the picture, we know that the width is also 6.

After all you have found the area of one side, multiply that number by 6 (because there are six sides exactly the same area). The resulting number will be your surface area.

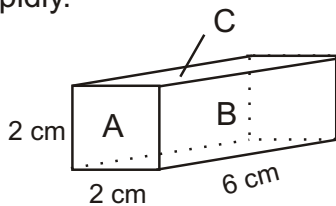
Surface area of a cube = $(\text{length} \times \text{width})(6)$

$$\text{S.A.} = (6 \cdot 6)(6)$$

$$\text{S.A.} = (36)(6)$$

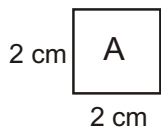
$$\text{S.A.} = 216 \text{ cm}^2$$

When finding the surface area of a rectangular prism, we must use the knowledge that opposite sides of a rectangular prism are exactly the same. This knowledge will help us solve the problem more rapidly.

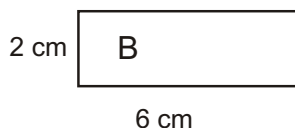


First, we must find the area of surface A, B, and C.

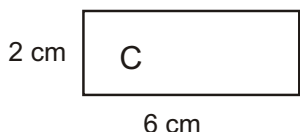
After we find those three areas, all we have to do is add the three numbers and then double that quantity.



$$\text{Area} = (2)(2) = 4 \text{ cm}^2$$



$$\text{Area} = 12 \text{ cm}^2$$



$$\text{Area} = 12 \text{ cm}^2$$

Add all three areas
 $(4) + (12) + (12) = 28 \text{ cm}^2$

Remember that the opposite side of each rectangle or square is congruent (exactly the same). So we must double 28

$$\text{S.A.} = (28)(2) = 56 \text{ cm}^2$$



Directions: Find the Surface area of each cube or rectangular prism below. SHOW YOUR WORK LIKE THE EXAMPLE GIVEN ON THE PREVIOUS PAGE.

