

## Curriculum Outcome

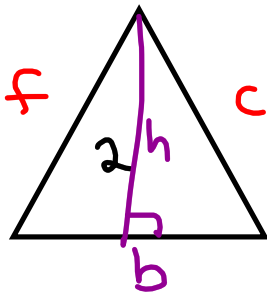
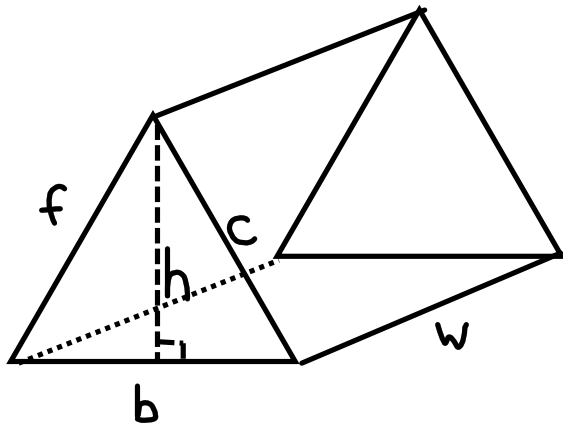
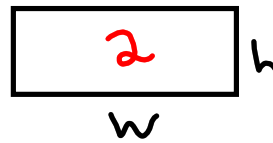
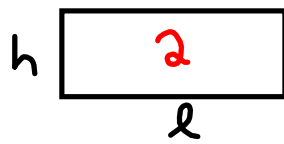
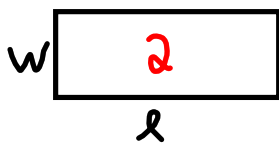
(N5) Determine the square root of positive rational numbers that are perfect squares.

(N6) Determine an approximate square root of positive rational numbers that are non-perfect squares.

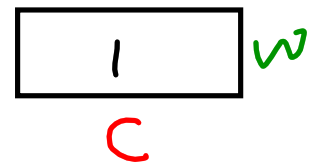
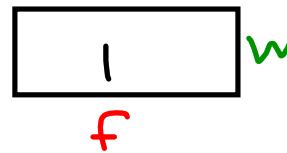
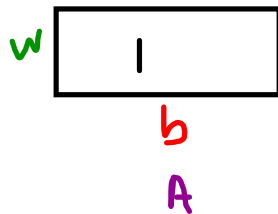
(SS2) Determine the surface area of composite 3-D objects to solve problems

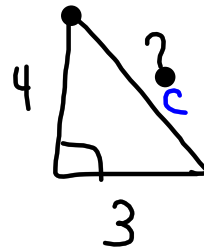
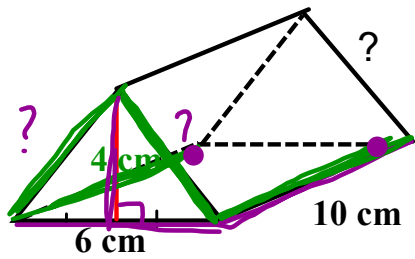
(N4) \*\*Explain and apply the order of operations, including exponents, with and without technology.\*\*

$l, w, h$



$$A = \frac{b \times h}{2}$$





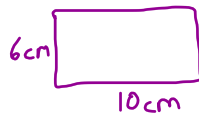
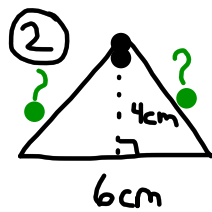
$$c^2 = a^2 + b^2$$

$$c^2 = 4^2 + 3^2$$

$$c^2 = 16 + 9$$

$$\sqrt{c^2} = \sqrt{25}$$

$$c = 5$$



$$A_1 = \frac{b \times h}{2}$$

$$A = b \times h$$

$$A = b \times h$$

$$A = \frac{6 \text{ cm} \times 4 \text{ cm}}{2}$$

$$A = 6 \text{ cm} \times 10 \text{ cm}$$

$$= 10 \text{ cm} \times 5 \text{ cm}$$

$$= 50 \text{ cm}^2$$

$$A_1 = 12 \text{ cm}^2$$

$$A = 60 \text{ cm}^2$$

$$2A = 100 \text{ cm}^2$$

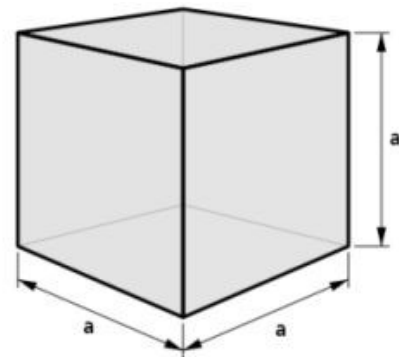
$$2A_1 = 24 \text{ cm}^2$$

$$T_{SA} = 2A_1 + A_2 + 2A_3$$

$$= 24 \text{ cm}^2 + 60 \text{ cm}^2 + 100 \text{ cm}^2$$

$$= 184 \text{ cm}^2$$

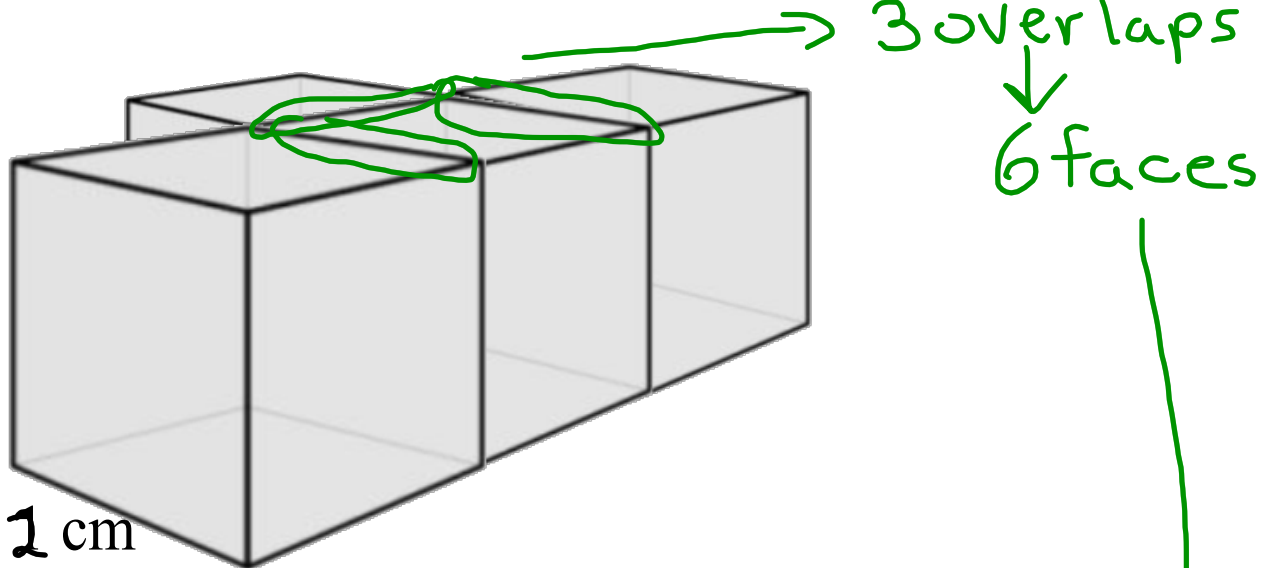
# Cubes



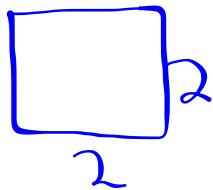
1cm

Number of Faces:   6

Find the Surface Area of the Connected Cubes



$$4 \text{ cubes} \times 6 \text{ faces} = 24 \text{ faces} - 6 \text{ faces}$$

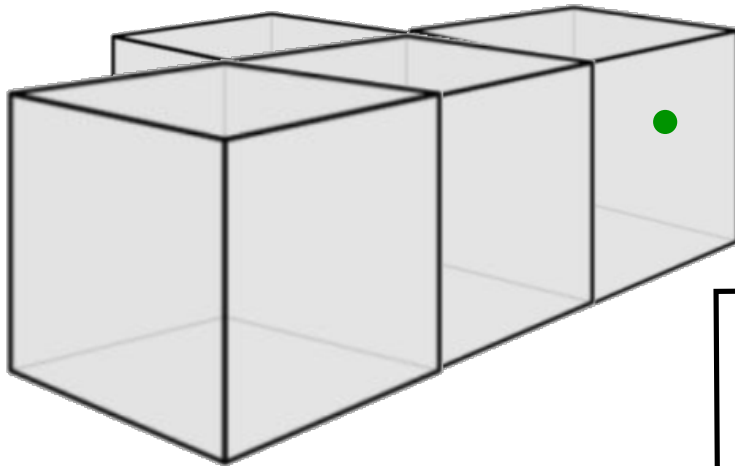


$$A = 4 \text{ cm}^2$$

$$= 18 \text{ faces} \times 4 \text{ cm}^2$$

$$TSA = 72 \text{ cm}^2$$

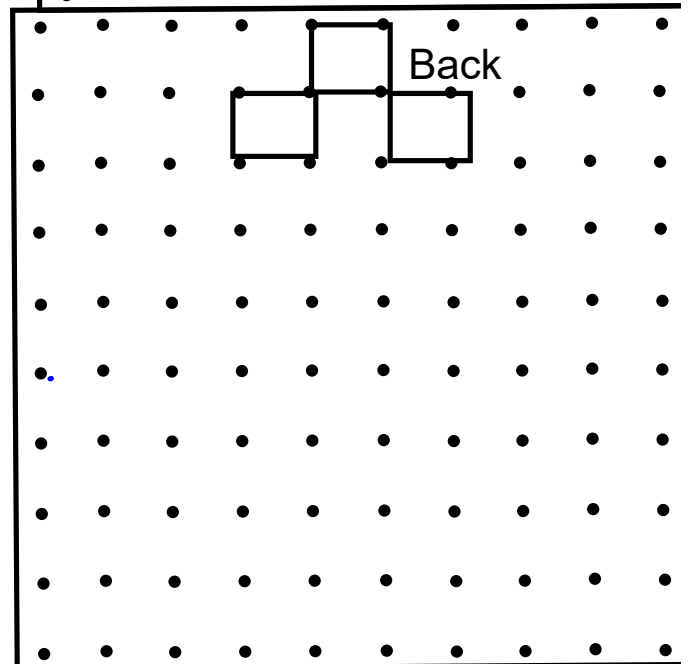
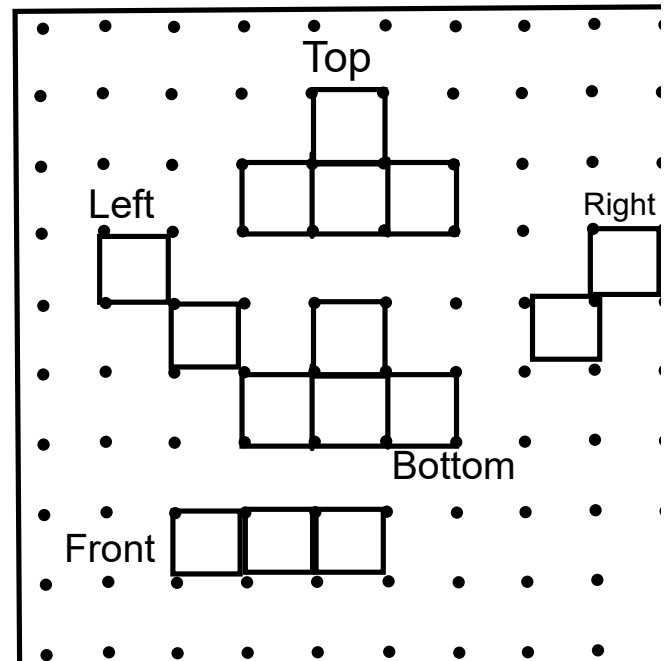
**Method 2: (Visualize the top/bottom, front/back, side/side)**

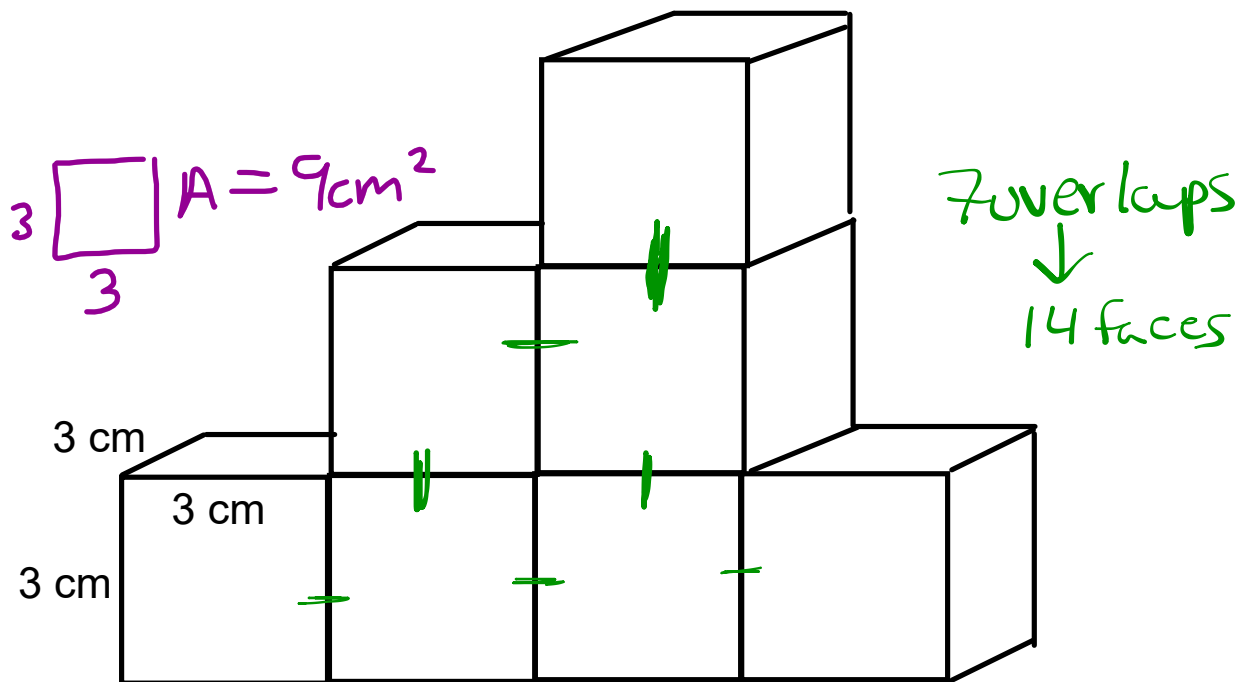


How many faces do we see on the top?  
 How many faces do we see on the bottom?

How many faces do we see on the front?  
 How many faces do we see on the back?

How many faces do we see on the left side?  
 How many faces do we see on the right side?





$$7 \text{ cubes} \times 6 \text{ faces}$$

$$= 42 \text{ faces} - 14 \text{ faces}$$

$$= 28 \text{ faces}$$

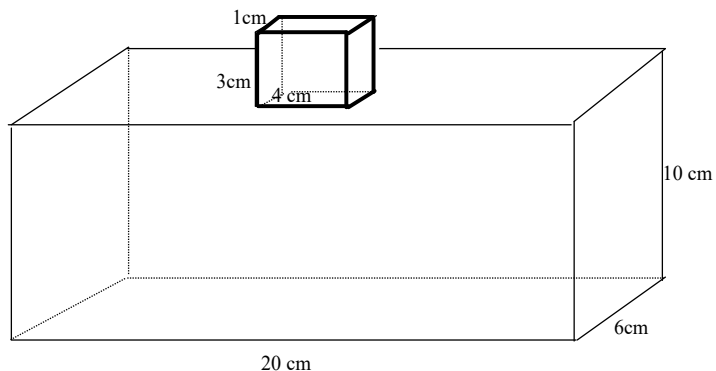
$$\times 9 \text{ cm}^2$$

$$\overline{TSA} = \underline{252 \text{ cm}^2}$$

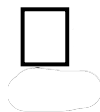
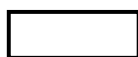
Determine the surface area of the composite object.

What effect does the overlap have on the calculation of the surface area?

\*count bottom



**STEP 1: Calculate the surface areas of the larger rectangular prism**



**STEP 2: Calculate the surface areas of the smaller rectangular prism**

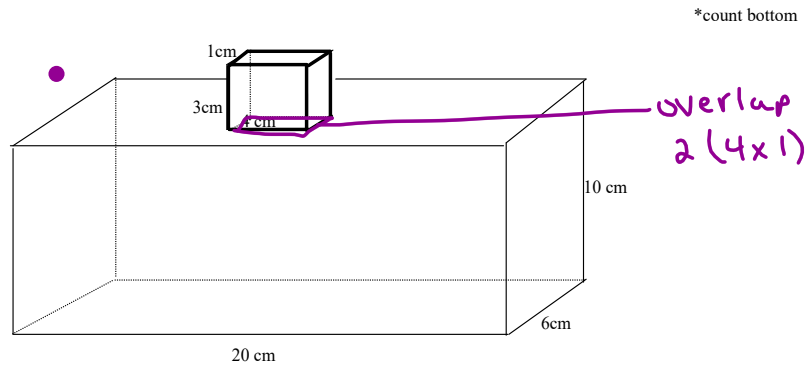


**STEP 3: Identify the overlap and remove it**



Determine the surface area of the composite object.

What effect does the overlap have on the calculation of the surface area?



20, 6, 10

STEP 1: Calculate the surface areas of the larger rectangular prism

$\begin{array}{c} \boxed{2} \\ 10 \text{ cm} \\ 20 \text{ cm} \end{array}$ $A = b \times h$ $A = 20 \times 10$ $A = 200$ $2A = 400$	$\begin{array}{c} \boxed{2} \\ 10 \text{ cm} \\ 6 \text{ cm} \end{array}$ $A = b \times h$ $A = 6 \times 10$ $A = 60$ $2A = 120$	$\begin{array}{c} \boxed{2} \\ 6 \text{ cm} \\ 20 \text{ cm} \end{array}$ $A = b \times h$ $A = 20 \times 6$ $A = 120$ $2A = 240$
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$$SA_{\text{Big}} = 400 + 240 + 120 = 760 \text{ cm}^2$$

4, 3, 1

STEP 2: Calculate the surface areas of the smaller rectangular prism

$\begin{array}{c} \boxed{\phantom{2}} \\ 4 \text{ cm} \\ 3 \text{ cm} \end{array}$ $A = b \times h$ $A = 3 \times 4$ $A = 12$ $2A = 24$	$\begin{array}{c} \boxed{2} \\ 1 \text{ cm} \\ 4 \text{ cm} \end{array}$ $A = b \times h$ $A = 4 \times 1$ $A = 4$ $2A = 8$	$\begin{array}{c} \boxed{\phantom{2}} \\ 1 \text{ cm} \\ 3 \text{ cm} \end{array}$ $A = b \times h$ $A = 3 \times 1$ $A = 3$ $2A = 6$
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$$SA_{\text{sm}} = 24 + 6 + 8 = 38 \text{ cm}^2$$

STEP 3: Identify the overlap and remove it

$$\begin{aligned}
 TSA &= \text{Big} + \text{Small} - \text{overlap} \\
 &= 760 + 38 - 8 \\
 &= 790 \text{ cm}^2
 \end{aligned}$$



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questions  
4abde,8a