

# Surface Area Using Nets

Lesson 10-3

**Name:** \_\_\_\_\_  
Type your name

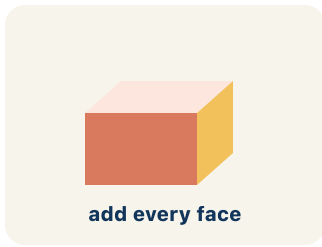
**Date:** \_\_\_\_\_  
Today's date

**Class:** \_\_\_\_\_  
Class period

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# Key Vocabulary Level 2 Standard

Picture first, then the word, then a plain-language meaning. Say each word out loud.



*A box  $6 \times 4 \times 2$ :  $SA = 2(24) + 2(12) + 2(8) = 88 \text{ in}^2$   
— like wrapping paper needed*

## Surface area

Write the definition:

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*Cut along the edges of a cereal box and unfold it flat — you see all 6 faces*

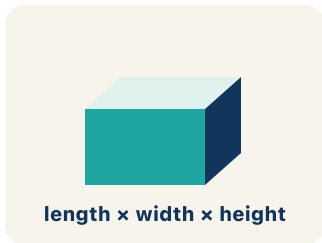
## Net

Write the definition:

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*A rectangular prism has 6 faces: top, bottom, front, back, left, right*

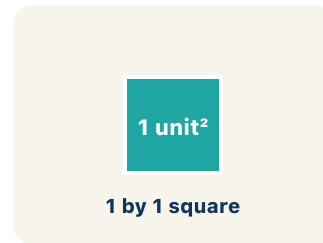
## Face

Write the definition:

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*A rectangle drawn on paper is 2D — it has length and width but no depth*

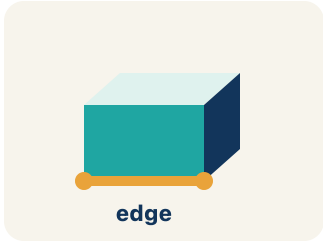
## Two-dimensional

Write the definition:

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*A cube has 12 edges – the lines where two flat faces connect*

## **Edge**

**Write the definition:**

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## Guided Notes Level 2 Standard



### WHAT WE'RE LEARNING TODAY

I can find the surface area of a solid by using its net.



Fill in each blank as we go. Use the Word Bank to help you.



### WORD BANK – FILL EACH BLANK WITH THE BEST WORD

Surface area

Net

Face

Two-dimensional

Edge



Tap any word to see what it means and a picture.

1 The total area of all the faces of a solid is its .

2 A flat pattern that folds up into a solid is a .

3 A flat surface of a solid figure is a .

4 A flat shape with length and width but no thickness is .

5 A line segment where two faces meet is an .



### Watch & Try – Worked Examples

See the notes in action: watch one worked all the way through, then try the next with the same steps.

 **I do – watch**


Follow each step as your teacher solves it.

**Problem:** A rectangular prism has  $l = 6$  in,  $w = 4$  in,  $h = 2$  in. What is its surface area?

- A.  $88 \text{ in}^2$
- B.  $48 \text{ in}^2$
- C.  $88 \text{ in}^3$
- D.  $44 \text{ in}^2$

**Step 1**  $SA = 2(6 \times 4) + 2(6 \times 2) + 2(4 \times 2) = 48 + 24 + 16 = 88 \text{ in}^2.$

 **Answer:** A.  $88 \text{ in}^2$

 **We do – together**

Solve this one with your class using the same steps.


**Problem:** How many faces does a rectangular prism have?

- A. 6
- B. 4
- C. 8
- D. 12

**Step 1** \_\_\_\_\_

**Step 2** \_\_\_\_\_

**Answer:** \_\_\_\_\_

 **You do — your turn**

Now try one on your own. Show every step.

**Problem:** Surface area is measured in which type of unit?

- A. Square units ( $\text{in}^2$ ,  $\text{cm}^2$ ,  $\text{ft}^2$ )
- B. Cubic units ( $\text{in}^3$ ,  $\text{cm}^3$ ,  $\text{ft}^3$ )
- C. Linear units (in, cm, ft)
- D. No units needed

Show your work:

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## Try It

Solve on your own. Check the answer key when you are done.

**1. Your team unfolds a rectangular time capsule box into a flat net. How many faces (flat sides) will the net show in all?**

- A. 6
- B. 4
- C. 5
- D. 8

Show your work:

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**2. A time capsule box measures 2 in  $\times$  3 in  $\times$  4 in. Using its net, you add up all six faces. What is the total surface area?**

- A. 52 in<sup>2</sup>
- B. 24 in<sup>2</sup>
- C. 26 in<sup>2</sup>
- D. 48 in<sup>2</sup>

Show your work:

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### Stretch Your Thinking

Level 2 enrichment

Challenge task — explain your reasoning in full sentences.

**Two boxes have the same volume of  $60 \text{ in}^3$ . Box A is  $5 \times 4 \times 3$ . Box B is  $10 \times 6 \times 1$ . Which box uses less wrapping paper (has less surface area)? Show your calculations and explain why a more cube-like shape might use less material.**

*Sentence starter: Box A:  $SA = 2(\text{---}) + 2(\text{---}) + 2(\text{---}) = \text{---} \text{ in}^2$ . Box B:  $SA = 2(\text{---}) + 2(\text{---}) + 2(\text{---}) = \text{---} \text{ in}^2$ . Box  $\text{---}$  uses less wrapping paper because  $\text{---}$ .*

Show your work:

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### Reflect — Exit Ticket

**A rectangular prism has  $l = 9 \text{ in}$ ,  $w = 5 \text{ in}$ ,  $h = 3 \text{ in}$ . What is the surface area?**

- A.  $174 \text{ in}^2$
- B.  $135 \text{ in}^2$
- C.  $174 \text{ in}^3$
- D.  $87 \text{ in}^2$

Your answer:

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