UNIT 10 · STANDARD 6.G.4

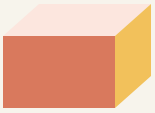
Surface Area of Prisms

Lesson 10-4

Name: Type your name **Date:** Today's date **Class:** Class period

Key Vocabulary Level 2 Standard

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



add every face

Paint every outside surface of a box — the total painted area is the surface area

Surface area

Write the definition:

length × width × height

A box with 6 flat rectangle sides: top, bottom, front, back, left, right

Rectangular prism

Write the definition:

length × width × height

Shaped like a tent or a wedge of cheese — 2 triangle ends + 3 rectangle sides

Triangular prism

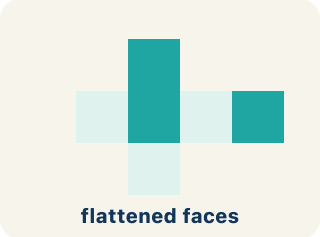
Write the definition:

length × width × height

A triangular prism has 5 faces: 2 triangles + 3 rectangles

Face

Write the definition:



Unfold a triangular prism flat: you see 2 triangles and 3 rectangles side by side

Net

Write the definition:

On a triangular prism, the 3 rectangles that wrap around the sides are lateral faces

Lateral face

Write the definition:

Guided Notes Level 2 Standard

🎯 **WHAT WE'RE LEARNING TODAY**

I can find the surface area of rectangular and triangular prisms.

✏️ **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 | Rectangular prism | Triangular prism | Face | Net | Lateral face

☝️ *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 solid with six rectangular faces is a _____.
3. A solid with two triangular faces and three rectangular faces is a _____.
4. A flat surface of a solid figure is a _____.
5. A flat pattern that folds into a solid is a _____.
6. A side face of a prism that is not a base is a _____.

🧱 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: What is the surface area of a rectangular prism with l = 5 cm, w = 4 cm, h = 3 cm?

A. 94 cm²

B. 60 cm²

C. 94 cm³

D. 47 cm²

Step 1 SA = 2(5×4) + 2(5×3) + 2(4×3) = 40 + 30 + 24 = 94 cm².

✅ **Answer:** A. 94 cm²

🤝 We do — together

Solve this one with your class using the same steps.

Problem: How many faces does a triangular prism have?

A. 5

B. 4

C. 6

D. 3

Step 1 _____

Step 2 _____

Answer: _____

✏️ **You do — your turn**

Now try one on your own. Show every step.

Problem: A triangular prism has two triangular bases each with area 12 cm² and three rectangular faces with areas 30 cm², 40 cm², and 40 cm². What is the total surface area?

A. 134 cm²

B. 110 cm²

C. 122 cm²

D. 134 cm³

Show your work:

Try It

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

1. A rectangular capsule crate is 6 cm long, 5 cm wide, and 4 cm tall. How much cardboard is needed to cover all its faces?

A. 148 cm^2

B. 120 cm^2

C. 74 cm^2

D. 148 cm^3

Show your work:

2. A wedge-shaped (triangular prism) capsule has triangle ends with base 8 in and height 6 in. The prism is 10 in long, and the triangle's three sides are 8 in, 6 in, and 10 in. How much wrapping paper covers it?

A. 288 in^2

B. 240 in^2

C. 48 in^2

D. 288 in^3

Show your work:

Stretch Your Thinking

Level 2 enrichment

Challenge task — explain your reasoning in full sentences.

A company ships products in two container options: a rectangular prism (8 × 6 × 4 in) or a triangular prism (triangle base 8 in, triangle height 6 in, prism length 8 in, slant sides 6.3 in each). Both must be wrapped in protective film. Which shape uses LESS film? Show your work.

Sentence starter: Rectangular prism SA = 2(____) + 2(____) + 2(____) = ____ in². Triangular prism SA = 2(____) + ____ + ____ + ____ = ____ in². The ____ uses less film because ____.

Show your work:

Reflect — Exit Ticket

A rectangular prism has l = 8 ft, w = 6 ft, h = 3 ft. What is the surface area?

A. 180 ft²

B. 144 ft²

C. 180 ft³

D. 90 ft²

Your answer: