



MATH WITH MR DJ

GRADE 7 · GEOMETRY

SURFACE AREA OF PRISMS

Today's goal: I can determine the surface area of three-dimensional prisms in mathematical problems and determine the surface area of three-dimensional prisms in real-world problems.



Tan



Digit



Blaze



Pi



A triangular prism

- 1 Two triangular ends, base 6 and height 4.
Length 10. Sides 5, 5, 6.

TURN & TALK

how many faces does it have?



WATCH OUT!

Five, not six

1 Two triangular ends + three rectangles = 5 faces.

2 Faces = (sides of the base) + 2.

DON'T FALL FOR IT

“A prism has six faces” is true only for a rectangular base.



BIG IDEA 2

Add them up: 184

- 1 Ends: $2 \times 12 = 24$.
- 2 Rectangles: $10 \times (5 + 5 + 6) = 160$.
- 3 Total 184 square units.



BIG IDEA 3

One formula for ALL prisms

1 $SA = 2B + Ph$

- 2 Two bases, plus the band wrapped around the outside.

REMEMBER

Unroll the band: it's one rectangle, P long and h tall.



BIG IDEA 4

Covering or filling?

- 1 Wrapping the outside → SURFACE AREA → square units.
- 2 Filling the inside → VOLUME → cubic units.

REMEMBER

Exactly half the right surface area? Three faces were counted.



SPOT THE SLIP!

Turn & talk

Something went wrong here...

THE PROBLEM

Find the volume of that cube.

WHAT A STUDENT DID

Answered 96, the surface area.

YOUR MISSION

What went wrong? What's the right answer?



Find the volume of that cube.

1 $4 \times 4 \times 4 = 64$ cubic units.

Answer: **64 cubic units**



YOUR TURN

Whiteboards up!

Pick your pepper!



🌶️ MILD

Find the surface area of a box 6 by 3 by 2.

#1 on your practice sheet



🌶️🌶️ MEDIUM

Find the surface area of a cube with edge 4.

#3 on your practice sheet



🌶️🌶️🌶️ SPICY

How many faces does that prism have? List them.

#6 on your practice sheet



How's it going?



3 • Got it!

I could teach it



2 • Almost

One more example, please



1 • Not yet

I need some help



MATH WITH MR DJ

NOW YOU!

Practice sheet: everyone does Mild & Medium, then climb the peppers.

Stuck? Look back at Mr DJ's example at the top of the sheet.

Need it again? Watch "Surface Area of Prisms — Step by Step Guide" on YouTube @MathWithMrDJ

Brain break: 3 new daily puzzles at puzzles.mathwithmrdj.com

