

Volume of Rectangular Prisms

Fill in each part when its number appears on the slide.

PART 1 • TARGET

I can find the volume of rectangular prisms and composite figures and explain what volume means.

PART 2 • WARM-UP

1. What is the area of a rectangle 5 cm long and 3 cm wide?

Key: 15 cm².

2. What is the difference between area and volume?

Key: Area covers a flat surface (square units). Volume fills a space (cubic units).

3. About how many sugar cubes could fit in a small box? How could you find out?

Key: Answers vary. Find how many fit in one layer, then multiply by the number of layers.

PART 3 • PREDICTION

How could you find how many sugar cubes fill a box without filling it?

Circle one: ☐ Count one layer, then multiply ☐ Guess ☐ Measure the outside only

PART 4 • VOCABULARY

Word	Meaning
Volume	The amount of space inside a 3-D figure, measured in cubic units.
Cubic unit	A cube 1 unit on each side (cm ³ , in ³ , ft ³).
Rectangular prism	A 3-D figure with 6 rectangular faces, like a box.
Base (B)	The area of the bottom face: length × width.

PART 5 • VOLUME FILLS SPACE

Volume counts CUBES that fill a space. It is measured in CUBIC units.

Check: How many cubes are in the prism?

Answer: _____ cm³

Key: 24 cm³. $4 \times 3 \times 2 = 24$.

PART 6 • LAYERS: $V = L \times W \times H$

Volume = LENGTH × WIDTH × HEIGHT.

Check: A box is 5 cm × 2 cm × 3 cm. Volume?

Answer: _____ cm³

Key: 30 cm³. $5 \times 2 \times 3 = 30$.

PART 7 • $V = B \times H$

$V = B \times h$, where B is the area of the BASE.

Check: Base area = 12 cm^2 , height = 5 cm. Volume?

Answer: _____ cm^3

Key: 60 cm^3 . $12 \times 5 = 60$.

PART 8 • COMPOSITE FIGURES

For a COMPOSITE figure, split it into prisms and ADD the volumes.

Check: Prism A is $4 \times 2 \times 2$. Prism B is $2 \times 2 \times 4$. Total volume?

Answer: _____ cm^3

Key: 32 cm^3 . $16 + 16 = 32$.

PART 9 • WORKED EXAMPLE

1. Problem: a prism 4 cubes long, 3 wide, and 5 tall.
2. Step 1: One layer: $4 \times 3 = 12$ cubes.
3. Step 2: There are 5 layers.
4. Step 3: $12 \times 5 = 60$.
5. Answer: 60 cubic units. Formula: $V = l \times w \times h$.

PART 10 • WE DO

A fish tank is 5 dm long, 3 dm wide, and 4 dm tall. How many liters does it hold? ($1 \text{ dm}^3 = 1 \text{ liter}$)

Answer: 60 liters

PART 11 • YOU DO

A box has a base of 20 cm^2 and a height of 6 cm. What is its volume?

Answer: _____ cm^3

Key: 120 cm^3 . $20 \times 6 = 120 \text{ cm}^3$.

PART 12 • WORK TIME: THE CASE OF THE STOLEN SAND

Write each code piece as you earn it: File 1: B File 2: O File 3: X File 4: E File 5: S

Final code: BOXES

PART 13 • WRAP-UP

Was your prediction in Part 3 right? One thing I learned today:

Key: Answers vary. Find how many fit in one layer, then multiply by the number of layers.