LESSON MAKER PRO

Build the Volume

Multiply layers, then add parts.

GRADE 5 · NY-5.MD.5

NY-5.MD.5 "Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume."

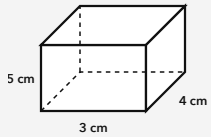
NAME _____ DATE _____

FIND VOLUME

For a rectangular prism, multiply length × width × height to find cubic units. If a solid is made of nonoverlapping rectangular prisms, find each volume and add them.

WORKED EXAMPLE

What is the volume of the rectangular prism in the figure?



1. Multiply length and width: 3 × 4 = 12.
2. Multiply by height: 12 × 5 = 60.

Answer: 60 cm^3

PRACTICE 4 problems

1 Find the volume of a rectangular prism that is 8 cm long, 9 cm wide, and 2 cm high.

ANSWER _____

2 Find the volume of a rectangular prism that is 10 m long, 6 m wide, and 7 m high.

ANSWER _____

3 A prism has 8 layers. Each layer has 6 rows of 7 unit cubes. What is its volume?

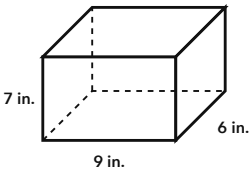
ANSWER _____

4 A solid is made by joining two rectangular prisms. One prism has a volume of 126 cm^3. The other has a volume of 144 cm^3. What is the total volume?

ANSWER _____

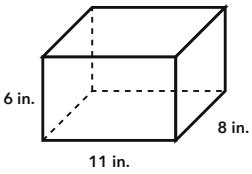
APPLY IT Show your work

1 The rectangular prize box in the figure holds game tokens. What is its volume?



ANSWER _____

2 The crate in the figure is filled with identical juice boxes, one per cubic inch. How many juice boxes fit in the crate?



ANSWER _____

CHALLENGE One step up

A clubhouse storage unit is made by joining two rectangular prisms. One prism is 13 cm by 7 cm by 2 cm. The other is 13 cm by 9 cm by 2 cm. What is the combined volume? Show an addition equation.

WORK SPACE AND ANSWER

ANSWER KEY

Build the Volume

GRADE 5 · NY-5.MD.5

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Find the volume of a rectangular prism that is 8 cm long, 9 cm wide, and 2 cm high.	**144 cm^3**
2	Find the volume of a rectangular prism that is 10 m long, 6 m wide, and 7 m high.	**420 m^3**
3	A prism has 8 layers. Each layer has 6 rows of 7 unit cubes. What is its volume?	**336 cubic units**
4	A solid is made by joining two rectangular prisms. One prism has a volume of 126 cm^3. The other has a volume of 144 cm^3. What is the total volume?	**270 cm^3**

PART 2 · APPLY IT

1. **378 $in.^3$** Multiply 9 × 6 × 7. The product is 378.
2. **528 juice boxes** Find the crate's volume: 11 × 8 × 6 = 528 cubic inches. One juice box fits in each cubic inch.

CHALLENGE

416 cm^3; 182 + 234 = 416

Accept equivalent multiplication expressions and correct cubic units. For the challenge, accept any correct addition equation that shows the two prism volumes.