LESSON MAKER PRO

Volume Builder Lab

Multiply dimensions and add prism volumes.

GRADE 5 · 5.MD.C.5

CCSS.Math.Content.5.MD.C.5 "Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume."

NAME _____ DATE _____

FIND VOLUME

To find the volume of a rectangular prism, multiply its length x width x height. Write the answer in cubic units, such as cm^3. If a solid is made from separate rectangular prisms, find each volume and add them.

WORKED EXAMPLE

Find the volume of a rectangular prism that is 13 cm long, 11 cm wide, and 5 cm high.

1. Find the base area: 13 x 11 = 143 square cm.
2. Multiply by the height: 143 x 5 = 715 cubic cm.
3. Write the volume as 715 cm^3.

Answer: 715 cm^3

PRACTICE 6 problems

1 Find the volume of a rectangular prism that is 8 cm long, 9 cm wide, and 4 cm high.

ANSWER _____

2 A rectangular prism has a base that is 12 cm by 6 cm and a height of 7 cm. Find its volume.

ANSWER _____

3 A rectangular prism has a volume of 360 cm^3. Its length is 10 cm and its width is 9 cm. What is its height?

ANSWER _____

4 Find the volume of a rectangular prism that is 15 cm long, 8 cm wide, and 3 cm high.

ANSWER _____

5 A rectangular prism has a volume of 720 cm^3. Its length is 12 cm, its width is 10 cm, and its height is x cm. Find x.

ANSWER _____

6 A cube has an edge length of 9 cm. What is its volume?

ANSWER _____

APPLY IT Show your work

1 Mia makes a rectangular storage box for her trading cards. The inside of the box is 18 cm long, 8 cm wide, and 6 cm high. What volume can the box hold?

WORK SPACE

ANSWER _____

2 At a school makers club, Leo packs 1-cm cubes into a rectangular prize display that is 20 cm long, 7 cm wide, and 9 cm high. How many cubes fit exactly?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A snack stand display is made by joining two solid rectangular prisms with no overlap. The bottom prism is 14 cm long, 8 cm wide, and 6 cm high. The top prism is 14 cm long, 8 cm wide, and 3 cm high. What is the total volume of the display?

_____

_____

ANSWER KEY

Volume Builder Lab

GRADE 5 · 5.MD.C.5

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Find the volume of a rectangular prism that is 8 cm long, 9 cm wide, and 4 cm high.	**288 cm^3**
2	A rectangular prism has a base that is 12 cm by 6 cm and a height of 7 cm. Find its volume.	**504 cm^3**
3	A rectangular prism has a volume of 360 cm^3. Its length is 10 cm and its width is 9 cm. What is its height?	**4 cm**
4	Find the volume of a rectangular prism that is 15 cm long, 8 cm wide, and 3 cm high.	**360 cm^3**
5	A rectangular prism has a volume of 720 cm^3. Its length is 12 cm, its width is 10 cm, and its height is x cm. Find x.	**6 cm**
6	A cube has an edge length of 9 cm. What is its volume?	**729 cm^3**

PART 2 · APPLY IT

1. **864 cm^3** Multiply the three inside dimensions: 18 x 8 x 6 = 864. The box holds 864 cm^3.
2. **1,260 cubes** Find the display volume: 20 x 7 x 9 = 1,260 cm^3. Each 1-cm cube fills 1 cm^3, so 1,260 cubes fit.

CHALLENGE

1,008 cm^3

Accept equivalent multiplication order and correct cubic units. For the missing-height items, accept 4 cm and 6 cm; for the challenge, students may add 672 cm^3 and 336 cm^3.