

Prism Space Quest

Find how much space each rectangular prism holds.

GRADE 5 • MA.5.GR.3

MA.5.GR.3 "Solve problems involving the volume of right rectangular prisms."

NAME _____

DATE _____

VOLUME RULE

To find the volume of a right rectangular prism, multiply its length $\times$ width $\times$ height. Write cubic units because volume measures the space inside a solid.

WORKED EXAMPLE

A rectangular prism is 6 cm long, 5 cm wide, and 8 cm high. What is its volume?

1. $6 \times 5 = 30$

2. $30 \times 8 = 240$

Answer: 240 cubic centimeters

PRACTICE 6 problems

- 1** Find the volume of a rectangular prism that is 2 cm long, 9 cm wide, and 4 cm high.

ANSWER _____

- 2** Find the volume of a rectangular prism that is 11 m long, 3 m wide, and 2 m high.

ANSWER _____

- 3** Find the volume of a rectangular prism that is 12 in. long, 7 in. wide, and 3 in. high.

ANSWER _____

- 4** A cube has side lengths of 9 cm. What is its volume?

ANSWER _____

- 5** Find the volume of a rectangular prism that is 15 ft long, 4 ft wide, and 2 ft high.

ANSWER _____

- 6** Find the volume of a rectangular prism that is 10 cm long, 11 cm wide, and 3 cm high.

ANSWER _____

APPLY IT Show your work

- 1** A robotics team packs parts in a box that is 14 in. long, 3 in. wide, and 2 in. high. What is the volume of the box?

WORK SPACE

ANSWER _____

- 2** A game-card organizer is 12 cm long, 9 cm wide, and 2 cm high. What is the volume of the organizer?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A shipping box has a volume of 4,800 cubic centimeters. It is 20 cm long and 16 cm wide. What is its height?

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Find the volume of a rectangular prism that is 2 cm long, 9 cm wide, and 4 cm high.	72 cubic centimeters
2	Find the volume of a rectangular prism that is 11 m long, 3 m wide, and 2 m high.	66 cubic meters
3	Find the volume of a rectangular prism that is 12 in. long, 7 in. wide, and 3 in. high.	252 cubic inches
4	A cube has side lengths of 9 cm. What is its volume?	729 cubic centimeters
5	Find the volume of a rectangular prism that is 15 ft long, 4 ft wide, and 2 ft high.	120 cubic feet
6	Find the volume of a rectangular prism that is 10 cm long, 11 cm wide, and 3 cm high.	330 cubic centimeters

PART 2 • APPLY IT

1. **84 cubic inches** Multiply the three dimensions: $14 \times 3 \times 2 = 84$. The box holds 84 cubic inches.
2. **216 cubic centimeters** Multiply the length, width, and height: $12 \times 9 \times 2 = 216$. The organizer has a volume of 216 cubic centimeters.

CHALLENGE

15 cm

Accept cubic units, cu. units, or the correct named cubic unit. For the challenge, divide 4,800 by the product of 20 and 16.