

Fill It Up

Measure how much space containers can hold.

GRADE 5 • 5.MG.2.c

5.MG.2.c "Describe volume as a measure of capacity and give examples of volume as a measurement in contextual situations."

NAME _____

DATE _____

SPACE INSIDE

Volume tells how much space is inside a solid or container, so it can describe capacity. For a rectangular prism, multiply length $\times$ width $\times$ height. Write the answer in cubic units.

WORKED EXAMPLE

A rectangular storage bin is 7 cm long, 11 cm wide, and 13 cm high. What is its volume?

1. Volume = length $\times$ width $\times$ height.

2. $7 \times 11 = 77$.

3. $77 \times 13 = 1,001$.

Answer: 1,001 cubic cm

PRACTICE 6 problems

- 1** A toy box is 4 cm long, 5 cm wide, and 3 cm high. What volume can it hold?

ANSWER _____

- 2** A snack container is 6 cm long, 2 cm wide, and 4 cm high. What is its volume?

ANSWER _____

- 3** A small aquarium is 8 cm long, 3 cm wide, and 5 cm high. What volume can it hold?

ANSWER _____

- 4** A shipping box is 9 cm long, 2 cm wide, and 3 cm high. What is its volume?

ANSWER _____

- 5** A storage drawer is 10 cm long, 4 cm wide, and 2 cm high. What volume can it hold?

ANSWER _____

- 6** A compost bin is 12 cm long, 3 cm wide, and 2 cm high. What is its volume?

ANSWER _____

APPLY IT Show your work

- 1** The school science club is setting up a rectangular terrarium for insects. It is 15 cm long, 4 cm wide, and 6 cm high. What volume of space does the terrarium have?

WORK SPACE

ANSWER _____

- 2** Maya fills a rectangular craft-bead box completely with unit cubes. The box is 14 cm long, 5 cm wide, and 3 cm high. How many unit cubes fit in the box?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A rectangular water tank is 18 cm long, 3 cm wide, and 4 cm high. Another tank is 9 cm long and 6 cm wide. It has the same capacity as the first tank. What height must the second tank have? Explain how you know.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	A toy box is 4 cm long, 5 cm wide, and 3 cm high. What volume can it hold?	60 cubic cm
2	A snack container is 6 cm long, 2 cm wide, and 4 cm high. What is its volume?	48 cubic cm
3	A small aquarium is 8 cm long, 3 cm wide, and 5 cm high. What volume can it hold?	120 cubic cm
4	A shipping box is 9 cm long, 2 cm wide, and 3 cm high. What is its volume?	54 cubic cm
5	A storage drawer is 10 cm long, 4 cm wide, and 2 cm high. What volume can it hold?	80 cubic cm
6	A compost bin is 12 cm long, 3 cm wide, and 2 cm high. What is its volume?	72 cubic cm

PART 2 • APPLY IT

1. **360 cubic cm** Multiply $15 \times 4 \times 6$. The terrarium has a volume, or capacity, of 360 cubic cm.
2. **210 unit cubes** Multiply $14 \times 5 \times 3$. A volume of 210 cubic cm means 210 unit cubes fit inside.

CHALLENGE

4 cm. The first tank has a volume of $18 \times 3 \times 4 = 216$ cubic cm. The second tank has $9 \times 6 = 54$ cubic cm in each layer, and $216 \div 54 = 4$ layers.

Accept answers written with “cubic cm” or “cm3.” For the challenge, accept any clear explanation that finds the first tank's volume and divides by 9×6 .