LESSON MAKER PRO

Build Volume Totals

Add the space in two rectangular prisms.

GRADE 5 · 5.MD.C.5c

CCSS.Math.Content.5.MD.C.5c "Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems."

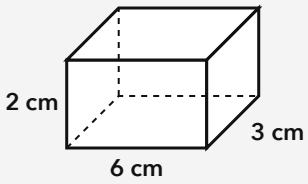
NAME _____ DATE _____

ADD THE PARTS

When a solid is made of two non-overlapping rectangular prisms, find each prism's volume. Add the two volumes because the parts fill separate space.

WORKED EXAMPLE

A solid is made by joining Prism A, shown, to Prism B, which measures 4 cm by 3 cm by 2 cm. Find the total volume.



1. Volume of Prism A: $6 \times 3 \times 2 = 36$ cm^3.
2. Volume of Prism B: $4 \times 3 \times 2 = 24$ cm^3.
3. Add: $36 + 24 = 60$ cm^3.
4. The total volume is 60 cm^3.

Answer: 60 cm^3

PRACTICE 4 problems

1 Two non-overlapping prisms each have a width of 7 cm and a height of 8 cm. Their lengths are 5 cm and 1 cm. Find the total volume.

ANSWER _____

2 Two non-overlapping prisms each have a width of 7 cm and a height of 5 cm. Their lengths are 9 cm and 1 cm. Find the total volume.

ANSWER _____

3 Two non-overlapping prisms each have a width of 9 cm and a height of 5 cm. Their lengths are 8 cm and 7 cm. Find the total volume.

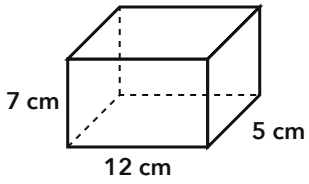
ANSWER _____

4 Two non-overlapping prisms each have a width of 8 cm and a height of 7 cm. Their lengths are 10 cm and 11 cm. Find the total volume.

ANSWER _____

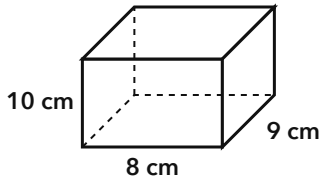
APPLY IT Show your work

1 Maya builds a game-controller stand from two non-overlapping prisms. Prism A is shown. Prism B measures 1 cm by 5 cm by 7 cm. What is the stand's total volume?



ANSWER _____

2 A robotics team makes a two-part display block from two non-overlapping prisms. Prism A is 8 cm long, 9 cm wide and 10 cm high. Prism B measures 5 cm by 9 cm by 10 cm. What is the display block's total volume?



ANSWER _____

CHALLENGE One step up

A streaming-club display is made from two non-overlapping prisms. One prism measures 14 cm by 12 cm by 11 cm. The other measures 14 cm by 12 cm by 13 cm. Find the total volume. Then explain why you add the volumes instead of multiplying them.

WORK SPACE AND ANSWER

ANSWER KEY

Build Volume Totals

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PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Two non-overlapping prisms each have a width of 7 cm and a height of 8 cm. Their lengths are 5 cm and 1 cm. Find the total volume.	**336 cm^3**
2	Two non-overlapping prisms each have a width of 7 cm and a height of 5 cm. Their lengths are 9 cm and 1 cm. Find the total volume.	**350 cm^3**
3	Two non-overlapping prisms each have a width of 9 cm and a height of 5 cm. Their lengths are 8 cm and 7 cm. Find the total volume.	**675 cm^3**
4	Two non-overlapping prisms each have a width of 8 cm and a height of 7 cm. Their lengths are 10 cm and 11 cm. Find the total volume.	**1,176 cm^3**

PART 2 · APPLY IT

1. **455 cm^3** Prism A has volume 12 × 5 × 7 = 420 cm^3. Prism B has volume 1 × 5 × 7 = 35 cm^3, so the total is 455 cm^3.
2. **1,170 cm^3** Prism A has volume 8 × 9 × 10 = 720 cm^3. Prism B has volume 5 × 9 × 10 = 450 cm^3, so the total is 1,170 cm^3.

CHALLENGE

4,032 cm^3; Add because the prisms fill separate, non-overlapping space.

Accept correct addition of the two prism volumes with cubic units. For the challenge, accept equivalent explanations that the parts do not overlap and make one larger solid.