LESSON MAKER PRO

Volume Matchup

Find and compare the space inside solids.

GRADE 7 · 7.GR.B.4

7.GR.B.4 "Solve mathematical problems with and without context involving area, surface area, and volume of two- and three-dimensional objects. Solve problems involving area, surface area, and volume of polygonal figures and polyhedral solids..."

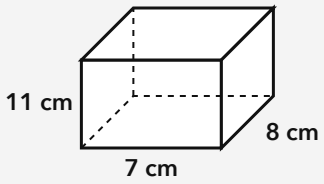
NAME _____ DATE _____

THE BIG IDEA

For a right prism, multiply the base area by the height to find volume. For a pyramid, multiply the base area by the height, then divide by 3.

WORKED EXAMPLE

Find the volume of the prism shown.



1. Base area = $7 \times 8 = 56$ cm^2.
2. Volume = $56 \times 11 = 616$ cm^3.

Answer: 616 cm^3

PRACTICE 4 problems

1 A right prism has a base area of 30 cm^2 and a height of 6 cm. Find its volume.

ANSWER _____

2 A pyramid has a base area of 72 cm^2 and a height of 12 cm. Find its volume.

ANSWER _____

3 A triangular prism has a base area of 45 cm^2 and a height of 10 cm. Find its volume.

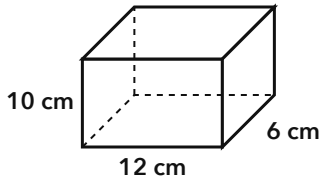
ANSWER _____

4 A pyramid has a volume of 150 cm^3 and a base area of 30 cm^2. Find its height.

ANSWER _____

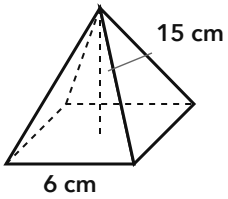
APPLY IT Show your work

1 A game club fills the box shown with 1 cm^3 cubes. How many cubes fit with no gaps? Can the box hold 700 cubes?



ANSWER _____

2 An art club makes a square-pyramid game piece. How much clay fills the mold shown?



ANSWER _____

CHALLENGE One step up

A right prism and a pyramid each have a base area of 60 cm^2 and a height of 12 cm. How much greater is the prism's volume? Explain why.

WORK SPACE AND ANSWER

ANSWER KEY

Volume Matchup

GRADE 7 · 7.GR.B.4

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	A right prism has a base area of 30 cm^2 and a height of 6 cm. Find its volume.	**180 cm^3**
2	A pyramid has a base area of 72 cm^2 and a height of 12 cm. Find its volume.	**288 cm^3**
3	A triangular prism has a base area of 45 cm^2 and a height of 10 cm. Find its volume.	**450 cm^3**
4	A pyramid has a volume of 150 cm^3 and a base area of 30 cm^2. Find its height.	**15 cm**

PART 2 · APPLY IT

1. **720 cubes fit. Yes, the box can hold 700 cubes.** The volume is 12 × 6 × 10 = 720 cm^3. That leaves room for 20 more cubes than the club needs.
2. **180 cm^3** The square base area is 6 × 6 = 36 cm^2. The volume is 36 × 15 ÷ 3 = 180 cm^3.

CHALLENGE

The prism's volume is 480 cm^3 greater. Its volume is 720 cm^3, while the pyramid's volume is 240 cm^3 because a pyramid with the same base area and height has one-third the volume.

Accept equivalent calculations with correct cubic units. For the challenge, accept any explanation that compares the prism's volume with one-third of that volume.