

Prism Power

Measure space and sort shapes by their properties.

GRADE 5 • 5.GSR.8

5.GSR.8 "Examine properties of polygons and rectangular prisms, classify polygons by their properties, and discover volume of right rectangular prisms."

NAME _____

DATE _____

VOLUME AND SHAPE CLUES

A polygon is a closed, flat shape made of straight sides. Classify a polygon by counting its sides and noticing properties such as equal sides or right angles. To find the volume of a right rectangular prism, multiply length $\times$ width $\times$ height. Volume tells how many unit cubes fill the prism.

WORKED EXAMPLE

Find the volume of a right rectangular prism that is 4 units long, 3 units wide, and 2 units high.

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

2. $4 \times 3 = 12$.

3. $12 \times 2 = 24$.

Answer: 24 cubic units

PRACTICE 6 problems

- 1** Find the volume of a right rectangular prism that is 5 units long, 6 units wide, and 7 units high.

ANSWER _____

- 2** Find the volume of a right rectangular prism that is 8 units long, 9 units wide, and 5 units high.

ANSWER _____

- 3** A cube has an edge length of 10 units. What is its volume?

ANSWER _____

- 4** Find the volume of a right rectangular prism that is 11 units long, 12 units wide, and 6 units high.

ANSWER _____

- 5** What is the name of a polygon with 5 sides?

ANSWER _____

- 6** What is the name of a polygon with 6 sides?

ANSWER _____

APPLY IT Show your work

- 1** The school garden club is filling a rectangular planter box with soil. The inside is 9 inches long, 6 inches wide, and 7 inches deep. What volume of soil can it hold?

WORK SPACE

ANSWER _____

- 2** At a game swap, trading cards are packed in a right rectangular box. The box is 7 cards long, 8 cards wide, and 5 cards high. How many cards fit in the box if it is completely filled?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A right rectangular prism has a volume of 840 cubic units. Its length is 10 units and its width is 7 units. What is its height? Show how you know.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Find the volume of a right rectangular prism that is 5 units long, 6 units wide, and 7 units high.	210 cubic units
2	Find the volume of a right rectangular prism that is 8 units long, 9 units wide, and 5 units high.	360 cubic units
3	A cube has an edge length of 10 units. What is its volume?	1,000 cubic units
4	Find the volume of a right rectangular prism that is 11 units long, 12 units wide, and 6 units high.	792 cubic units
5	What is the name of a polygon with 5 sides?	pentagon
6	What is the name of a polygon with 6 sides?	hexagon

PART 2 • APPLY IT

1. **378 cubic inches** Multiply the three inside measurements: $9 \times 6 \times 7 = 378$.
2. **280 cards** Multiply the number of cards in each direction: $7 \times 8 \times 5 = 280$.

CHALLENGE

12 units

Accept equivalent wording for cubic units, such as units cubed. For the challenge, accept work showing $10 \times 7 = 70$ and $840 \div 70 = 12$.