LESSON MAKER PRO

# Fill the Prism

*Find volumes with fractional edge lengths.*

**GRADE 6 · 6.GR.A.2**

**6.GR.A.2** "Find the volume of a right rectangular prism with fractional edge lengths. By packing prisms with unit cubes and using estimation to show that the volume can be found by multiplying the edge lengths of the prism…"

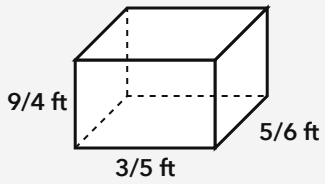
NAME _____ DATE _____

## THE BIG IDEA

To find a prism's volume, multiply its length, width, and height: V = l × w × h. You can also find the base area first, then multiply by the height: V = B × h.

## WORKED EXAMPLE

Find the volume of the prism shown.




1. Find the base area: 3/5 × 5/6 = 1/2 $ft^2$.
2. Multiply by the height: 1/2 × 9/4 = 9/8 $ft^3$.

**Answer: 9/8 $ft^3$**

## PRACTICE 4 problems

**1** Find the volume of a prism with edges 1/2 ft, 1/3 ft, and 3/4 ft.

**ANSWER** _____

**2** Find the volume of a prism with edges 2/3 in, 3/2 in, and 1/4 in.

**ANSWER** _____

**3** Find the volume of a prism with edges 1 1/2 yd, 2/5 yd, and 5/4 yd.

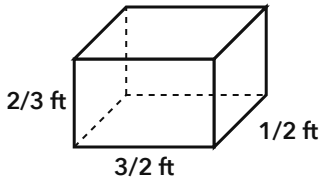
**ANSWER** _____

**4** A prism has a base area of 7/8 $cm^2$ and a height of 2/7 cm. Find its volume.

**ANSWER** _____

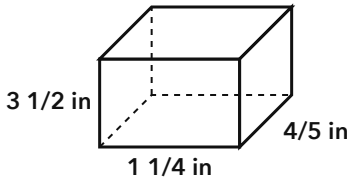
## APPLY IT Show your work

**1** An art-supply bin has the dimensions shown. What is its volume?




**ANSWER** _____

**2** A gaming club packs a prize in the box shown. What is the box's volume?




**ANSWER** _____

## CHALLENGE One step up

A prism measures 1 1/2 ft by 1 ft by 1/2 ft. How many cubes with 1/2-ft edges fill it? Explain how the cubes show its volume.

WORK SPACE AND ANSWER

**ANSWER KEY**

# Fill the Prism

**GRADE 6 · 6.GR.A.2**

## PART 1 · PRACTICE

| # | PROBLEM | ANSWER |
|---|---|---|
| 1 | Find the volume of a prism with edges 1/2 ft, 1/3 ft, and 3/4 ft. | **1/8 $ft^3$** |
| 2 | Find the volume of a prism with edges 2/3 in, 3/2 in, and 1/4 in. | **1/4 $in^3$** |
| 3 | Find the volume of a prism with edges 1 1/2 yd, 2/5 yd, and 5/4 yd. | **3/4 $yd^3$** |
| 4 | A prism has a base area of 7/8 $cm^2$ and a height of 2/7 cm. Find its volume. | **1/4 $cm^3$** |

## PART 2 · APPLY IT

1. **1/2 $ft^3$** Multiply the three edge lengths: 3/2 × 1/2 × 2/3 = 1/2.
2. **3 1/2 $in^3$** Convert the mixed numbers, then multiply: 5/4 × 4/5 × 7/2 = 7/2, or 3 1/2.

## CHALLENGE

**Six cubes fit: 3 along the length, 2 along the width, and 1 along the height. Each cube has a volume of 1/8 $ft^3$, so the prism's volume is 6 × 1/8 = 3/4 $ft^3$.**

Accept equivalent fractions and mixed numbers with correct cubic units. For the challenge, accept any explanation that connects six 1/8-$ft^3$ cubes to 3/4 $ft^3$.