

Measure It Up

Find perimeter, area, and volume in real situations.

GRADE 5 • 5.MG.2.g

5.MG.2.g "Solve contextual problems that involve perimeter, area, and volume in standard units of measure."

NAME _____

DATE _____

CHOOSE THE RIGHT MEASURE

Perimeter is the distance around a flat shape. Area is the space inside a flat shape, and volume is the space inside a solid box-shaped object. Use the units in the problem: units for perimeter, square units for area, and cubic units for volume.

WORKED EXAMPLE

A rectangular art mat is 11 cm long and 2 cm wide. What is its area?

1. Area = length times width.
2. Area = 11 cm times 2 cm.
3. Area = 22 square cm.

Answer: 22 square cm

PRACTICE 6 problems

- 1** A rectangular banner is 9 feet long and 6 feet wide. What is its perimeter?

ANSWER _____

- 2** A display board is 8 inches long and 5 inches wide. What is its area?

ANSWER _____

- 3** A shoebox is 3 inches long, 4 inches wide, and 6 inches high. What is its volume?

ANSWER _____

- 4** A square patio has a side length of 12 yards. What is its area?

ANSWER _____

- 5** A fish tank is 5 feet long, 3 feet wide, and 4 feet high. What is its volume?

ANSWER _____

- 6** A rectangular trail loop is 10 yards long and 7 yards wide. How far is it around the loop?

ANSWER _____

APPLY IT Show your work

- 1** The school gaming club wants a rectangular floor mat for its meeting space. The mat will be 14 feet long and 9 feet wide. How many square feet of floor will the mat cover?

WORK SPACE

ANSWER _____

- 2** Maya is packing collectible cards into a rectangular storage box that is 8 inches long, 5 inches wide, and 4 inches high. What is the volume of the box?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

A community garden is a rectangle. It has 96 feet of fencing, and one side is 28 feet long. What is the length of the other side? Then find the garden's area. Explain how you used the perimeter.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	A rectangular banner is 9 feet long and 6 feet wide. What is its perimeter?	30 feet
2	A display board is 8 inches long and 5 inches wide. What is its area?	40 square inches
3	A shoebox is 3 inches long, 4 inches wide, and 6 inches high. What is its volume?	72 cubic inches
4	A square patio has a side length of 12 yards. What is its area?	144 square yards
5	A fish tank is 5 feet long, 3 feet wide, and 4 feet high. What is its volume?	60 cubic feet
6	A rectangular trail loop is 10 yards long and 7 yards wide. How far is it around the loop?	34 yards

PART 2 • APPLY IT

1. **126 square feet** Multiply the length by the width: $14 \text{ times } 9 = 126$. The mat covers 126 square feet.
2. **160 cubic inches** Multiply the length, width, and height: $8 \text{ times } 5 \text{ times } 4 = 160$. The box has a volume of 160 cubic inches.

CHALLENGE

The other side is 20 feet long, and the area is 560 square feet. The two 28-foot sides use 56 feet of fencing, leaving 40 feet for the two other sides, so each other side is 20 feet.

Accept equivalent unit wording, such as sq. ft. for square feet and cu. in. for cubic inches. Require square units for area, cubic units for volume, and linear units for perimeter.