

Plan Then Solve

*Use a plan, solve, and check.***GRADES K-12 • Practice.MP1**

CCSS.Math.Practice.MP1 "Make sense of problems and persevere in solving them. Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints..."

NAME _____

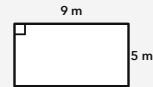
DATE _____

MAKE A MATH PLAN

First, name the goal and find the useful information. Choose an operation, solve step by step, then check in a different way. Ask whether your answer fits the situation.

WORKED EXAMPLE

The garden shown will be covered with square-meter mulch. What area needs mulch?



1. Goal: find the garden's area.
2. Multiply length by width: $9 \times 5 = 45$.
3. Check: 5 groups of 9 also equal 45.

Answer: 45 square meters

PRACTICE 4 problems

- 1** A club puts 6 pencils in each of 2 cups, then adds 1 pencil to the display. Write an equation, find the total, and check by addition.

ANSWER _____

- 2** Jalen has 25 arcade tickets. He trades 7 tickets for each of 3 game passes. Plan with an equation. How many tickets remain? Check whether your answer is less than 25.

ANSWER _____

- 3** Mia packs 8 trays with 4 muffins each for a bake sale. Choose multiplication or addition, then find the muffins. Check in the other way.

ANSWER _____

- 4** A supply drive needs 44 notebooks. Six boxes hold 7 notebooks each. Find how many more are needed. Show the plan that tells why you subtract.

ANSWER _____

APPLY IT Show your work

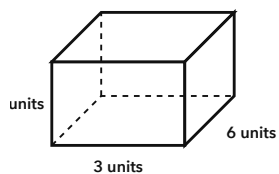
- 1** The bar graph shows books sold at a fair. Each book earns \$2. Find the total earnings. Show an addition plan, then check by finding earnings for each category.

BOOKS SOLD AT FAIR



ANSWER _____

- 2** A science museum stacks unit cubes in the display case shown. How many cubes fill it? Give a multiplication plan and check it by grouping in a different order.



ANSWER _____

CHALLENGE One step up

A theater has 8 rows of 6 seats. Twelve seats are saved for families and 7 are saved for the band. How many seats are still open? Explain why you multiply first and then subtract.

WORK SPACE AND ANSWER

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	A club puts 6 pencils in each of 2 cups, then adds 1 pencil to the display. Write an equation, find the total, and check by addition.	$6 \times 2 + 1 = 13$; check: $6 + 6 + 1 = 13$.
2	Jalen has 25 arcade tickets. He trades 7 tickets for each of 3 game passes. Plan with an equation. How many tickets remain? Check whether your answer is less than 25.	$25 - (7 \times 3) = 4$ tickets; 4 is less than 25.
3	Mia packs 8 trays with 4 muffins each for a bake sale. Choose multiplication or addition, then find the muffins. Check in the other way.	$8 \times 4 = 32$ muffins; check: $4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 = 32$.
4	A supply drive needs 44 notebooks. Six boxes hold 7 notebooks each. Find how many more are needed. Show the plan that tells why you subtract.	$6 \times 7 = 42$; $44 - 42 = 2$ more notebooks.

PART 2 • APPLY IT

- $12 + 14 + 10 = 36$ books; \$72. Check: $\$24 + \$28 + \$20 = \72 . Add the three bar values, then multiply the total by \$2. For a check, multiply each category by \$2 and add the earnings.
- $3 \times 6 \times 2 = 36$ cubes; check: $6 \times (3 \times 2) = 36$. Multiply the three dimensions to find the number of unit cubes. Regroup the factors to check the product.

CHALLENGE

$8 \times 6 = 48$; $48 - 12 - 7 = 29$ seats. Multiply to find all seats, then subtract seats already saved.

Accept equivalent equations and any correct check using repeated addition, regrouping, or separate category totals. For explanations, students should identify the total before subtracting or describe why their check matches.