LESSON MAKER PRO

Cover It All

Model area, then check your plan.

HIGH SCHOOL · GDA.GM.K

GDA.GM.K "Experiencing the mathematical modeling cycle in problems involving geometric concepts, from the simplification of the real problem through the solving of the simplified problem, the interpretation of its solution..."

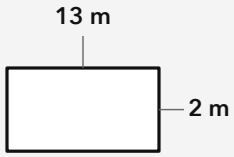
NAME _____ **DATE** _____

AREA TO ACTION

Simplify a surface into shapes whose areas you can find. Divide the total area by the area one can covers, then round up to a whole can. Check that your plan covers the surface, and state what your model ignores.

WORKED EXAMPLE

A rectangular wall is shown. One paint can covers 8 m². Ignore windows. How many cans are needed?



1. Model the wall as a rectangle: 13 × 2 = 26 m^2.
2. Divide by the coverage per can: 26/8 = 3.25.
3. Round up. Three cans cover only 24 m^2.

Answer: 4 cans

PRACTICE 4 problems

1 A 12 m by 9 m floor needs coating. One can covers 25 m^2. Ignore waste. How many cans are needed?

ANSWER _____

2 A mural wall is 18 ft by 8 ft. Each can covers 30 ft^2. Ignore waste. Are 4 cans enough? Use areas to explain.

ANSWER _____

3 A 15 m by 12 m court needs coating. One can covers 32 m^2. Ignore waste. How many cans are needed?

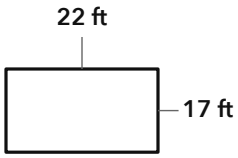
ANSWER _____

4 A 20 ft by 13 ft backdrop needs paint. One can covers 45 ft^2. Ignore waste. A crew has 5 cans. How many more are needed?

ANSWER _____

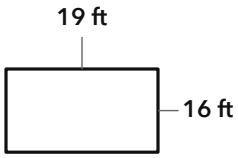
APPLY IT Show your work

1 A school club paints the game-night backdrop shown. Each can covers 80 ft^2. Ignore waste. Can the club use just 4 cans? If not, how many does it need?



ANSWER _____

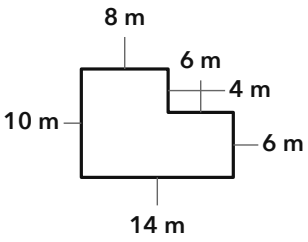
2 A gaming club wants to coat the booth floor shown. Each can covers 70 ft^2 and costs $18. Ignore waste. Can the club cover the floor with its $90 budget?



ANSWER _____

CHALLENGE One step up

A club coats the L-shaped floor shown. Each can covers 25 m^2. Ignore waste. How many cans are needed? Show how you found the area, then check whether one fewer can would work.



WORK SPACE AND ANSWER

Cover It All

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	A 12 m by 9 m floor needs coating. One can covers 25 m^2. Ignore waste. How many cans are needed?	**5 cans**
2	A mural wall is 18 ft by 8 ft. Each can covers 30 ft^2. Ignore waste. Are 4 cans enough? Use areas to explain.	**No. The wall is 144 ft^2, but 4 cans cover only 120 ft^2.**
3	A 15 m by 12 m court needs coating. One can covers 32 m^2. Ignore waste. How many cans are needed?	**6 cans**
4	A 20 ft by 13 ft backdrop needs paint. One can covers 45 ft^2. Ignore waste. A crew has 5 cans. How many more are needed?	**1 more can**

PART 2 · APPLY IT

1. **No, it needs 5 cans.** The backdrop has area 22 × 17 = 374 ft^2. Four cans cover 320 ft^2, so the club needs 5.
2. **Yes, 5 cans cost $90.** The floor has area 19 × 16 = 304 ft^2, so the club needs 5 cans. Their total cost is 5 × $18 = $90.

CHALLENGE

The area is (14 × 10) − (6 × 4) = 116 m^2. The club needs 5 cans; 4 cans cover only 100 m^2.

Accept a correct area found by splitting the L-shape into two rectangles. Answers assume the stated coverage is exact and that no coating is wasted.