

Name \_\_\_\_\_

### Problem Solving • Find the Area

**Essential Question** How can you use the strategy *solve a simpler problem* to solve area problems?



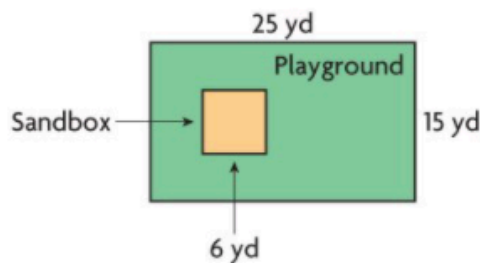
Measurement and Data—  
4.MD.3

**MATHEMATICAL PRACTICES**  
MP.1, MP.4, MP.6

### Unlock the Problem Real World

A landscaper is laying grass for a rectangular playground. The grass will cover the whole playground except for a square sandbox. The diagram shows the playground and sandbox. How many square yards of grass will the landscaper use?

Use the graphic organizer below to solve the problem.



#### Read the Problem

##### What do I need to find?

I need to find how many \_\_\_\_\_  
the landscaper will use.

##### What information do I need to use?

The grass will cover the \_\_\_\_\_.

The grass will not cover the \_\_\_\_\_.

The length and width of the playground are  
\_\_\_\_\_ and \_\_\_\_\_.

The side length of the square sandbox is  
\_\_\_\_\_.

##### How will I use the information?

I can solve simpler problems.

Find the area of the \_\_\_\_\_.

Find the area of the \_\_\_\_\_.

Then \_\_\_\_\_ the area of the \_\_\_\_\_

from the area of the \_\_\_\_\_.

#### Solve the Problem

First, find the area of the playground.

$$\begin{aligned} A &= b \times h \\ &= \underline{\quad} \times \underline{\quad} \\ &= \underline{\quad} \text{ square yards} \end{aligned}$$

Next, find the area of the sandbox.

$$\begin{aligned} A &= s \times s \\ &= \underline{\quad} \times \underline{\quad} \\ &= \underline{\quad} \text{ square yards} \end{aligned}$$

Last, subtract the area of the sandbox from the area of the playground.

$$\begin{array}{r} 375 \\ - 36 \\ \hline \end{array} \text{ square yards}$$

So, the landscaper will use \_\_\_\_\_

\_\_\_\_\_ of grass to cover the playground.

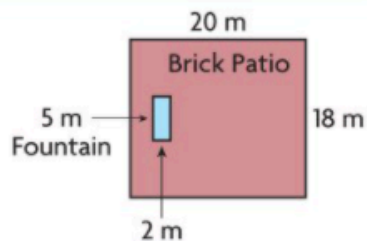
**Math Talk**

**Mathematical Practices**

**Explain** how the strategy helped you to solve the problem.

## Try Another Problem

Zach is laying a rectangular brick patio for a new museum. Brick will cover the whole patio except for a rectangular fountain, as shown in the diagram. How many square meters of brick does Zach need?



### Read the Problem

**What do I need to find?**

**What information do I need to use?**

**How will I use this information?**

### Solve the Problem

- How many square meters of brick does Zach need? Explain.

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Name \_\_\_\_\_

**Unlock the Problem**

- ✓ Use the Problem Solving MathBoard
- ✓ Underline important facts.
- ✓ Choose a strategy you know.

**Share and Show**

1. Lila is wallpapering one wall of her bedroom, as shown in the diagram. She will cover the whole wall except for the doorway. How many square feet of wallpaper does Lila need?



**First**, find the area of the wall.

$$A = b \times h$$

$$= \underline{\quad} \times \underline{\quad}$$

$$= \underline{\quad} \text{ square feet}$$



**Next**, find the area of the door.

$$A = b \times h$$

$$= \underline{\quad} \times \underline{\quad}$$

$$= \underline{\quad} \text{ square feet}$$



**Last**, subtract the area of the door from the area of the wall.

$$\underline{\quad} - \underline{\quad} = \underline{\quad} \text{ square feet}$$

So, Lila needs \_\_\_\_\_ of wallpaper.



2. What if there was a square window on the wall with a side length of 2 feet? How much wallpaper would Lila need then? Explain.

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3. Ed is building a model of a house with a flat roof, as shown in the diagram. There is a chimney through the roof. Ed will cover the roof with square tiles. If the area of each tile is 1 square inch, how many tiles will he need? Explain.

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