

## 5

# Solve Problems by Solving Simpler Problems

## You will need

- a 30 cm ruler



### Goal

**Solve problems by breaking them into smaller parts.**

Alain's school is planting a wildflower lawn. Each package of seeds covers  $4 \text{ m}^2$  of ground.



? **How many packages of seeds are needed?**



### Alain's Solution

#### Understand

I have to figure out how many packages of seeds are needed to cover the area of the lawn.

#### Make a Plan

The lawn shape can be divided into two rectangles:  $5 \text{ m}$  by  $3 \text{ m}$  and  $8 \text{ m}$  by  $3 \text{ m}$ .

I'll multiply the length by the width to calculate the area of each rectangle.

I'll add the two areas. Then I'll divide by 4 because each package covers  $4 \text{ m}^2$ .

#### Carry Out the Plan

$$\text{area 1: } 5 \text{ m} \times 3 \text{ m} = 15 \text{ m}^2$$

$$\text{area 2: } 8 \text{ m} \times 3 \text{ m} = 24 \text{ m}^2$$

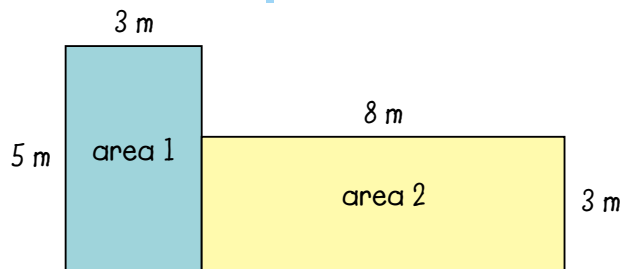
$$\text{area total: } 15 \text{ m}^2 + 24 \text{ m}^2 = 39 \text{ m}^2$$

$39 \div 4$  is almost 10.

We need 10 packages of seeds.

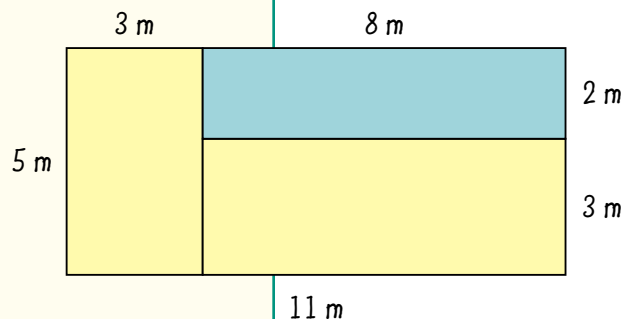
### $\text{m}^2$

The symbol for the area unit square metre.  $4 \text{ m}^2$  is read "four square metres."



## Reflecting

1. Why was solving two simpler problems a good strategy for Alain's area problem?
2. Yoshi says he can calculate the area of the lawn by calculating the area of an 11 m by 5 m rectangle and subtracting the area of an 8 m by 2 m rectangle. Would you get the same answer using Yoshi's method? Explain why or why not.



## Checking

3. Heather says she found another way to divide the school's lawn into rectangles.
  - a) Calculate the area of the lawn using a different set of rectangles than Alain or Yoshi.
  - b) Did you get the same answer as Alain? Explain why or why not.

## Practising

4. Emma is making initials to put on her backpack. Calculate the area of each letter in square centimetres. Show your work.
5. Ray swims in a pool that is 7 m wide and 14 m long. The pool deck is 2 m wide on all sides of the pool. What is the area of the pool deck in square metres? Show your work.

