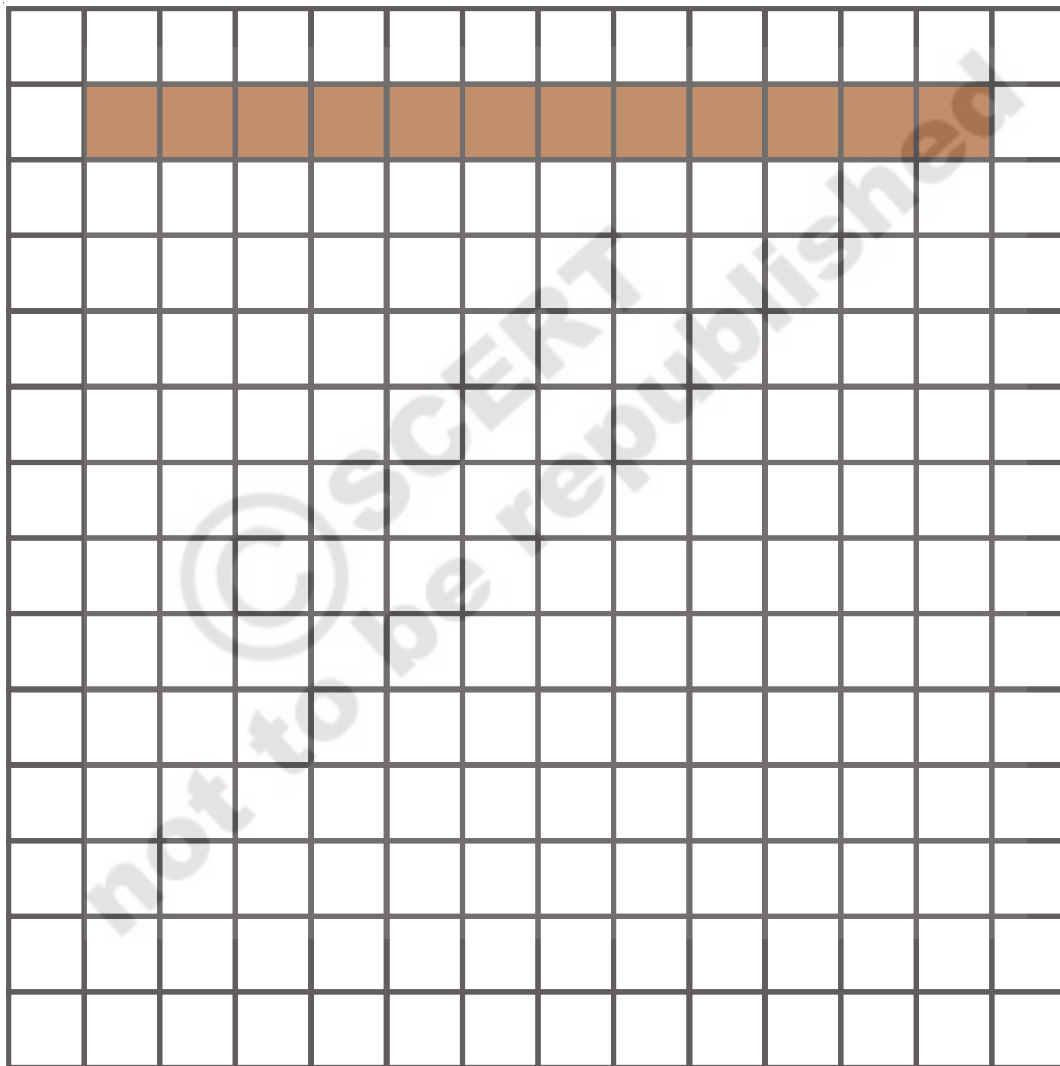


# 8

## Spaces and boundaries-2

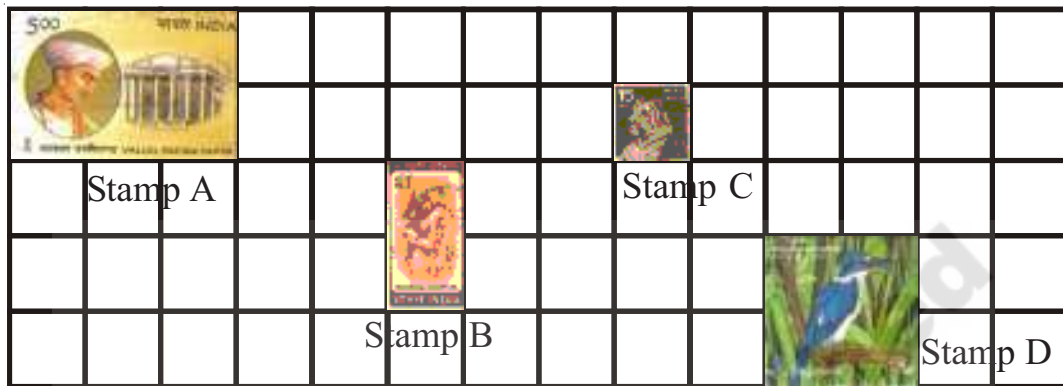
Use 12 squares to make as many types of rectangles as you can on the square sheet below. One has been done for you.



- (a) Do all the rectangles occupy the same area ?
- (b) Do all of them have the same perimeter? Which rectangle has the longest perimeter and which has the shortest?

**How much area do these stamps occupy?**

- (a) How many squares of 1 cm side does stamp A cover?  
 (b) How many squares of 1 cm side does stamp B cover?

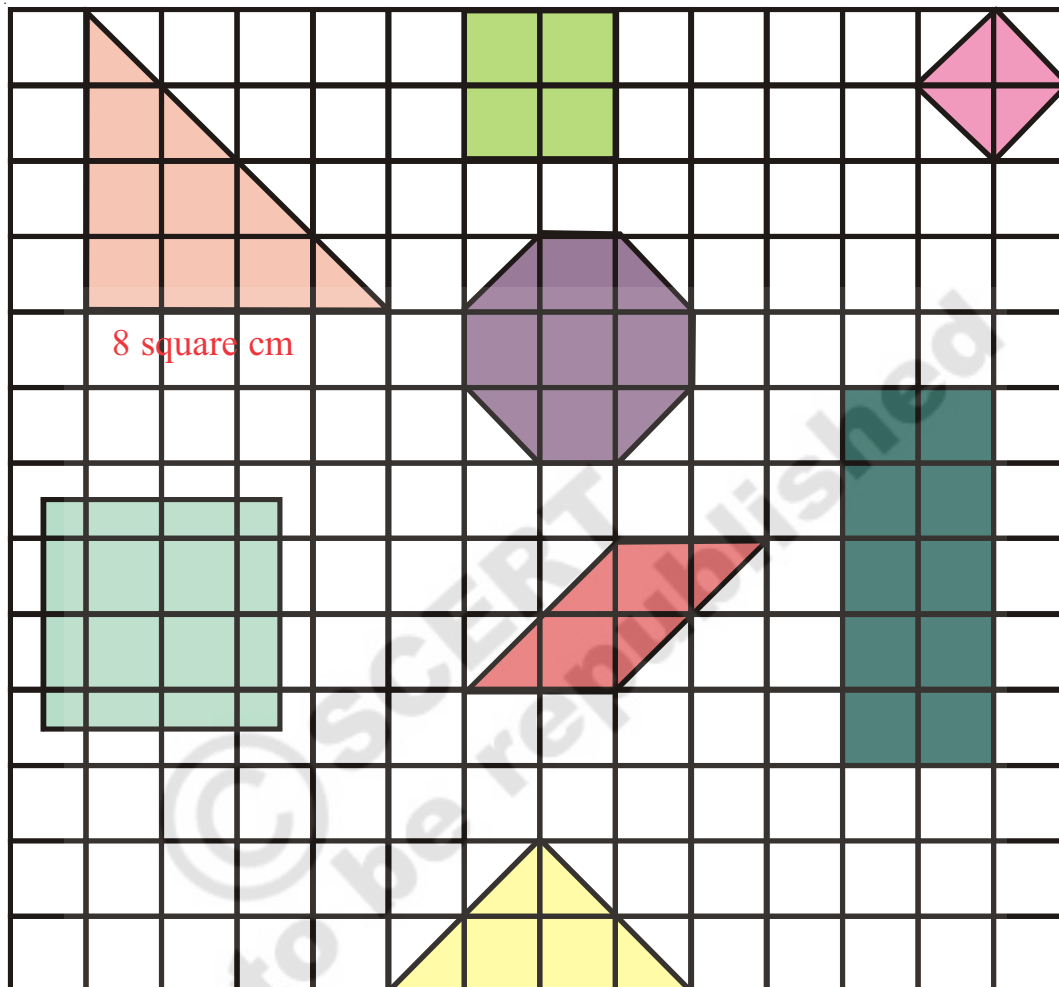


Stamp D covers 4 squares. Each square is of side 1 cm. So the area of the stamp is 4 square cm.

- (c) (i) Which stamp covers the largest area? \_\_\_\_\_  
 (ii) How many squares of side 1 cm does this stamp cover? \_\_\_\_\_  
 So this stamp's area = \_\_\_\_\_ square cm
- (d) (i) Which stamp covers the smallest area? \_\_\_\_\_  
 (ii) How many squares of side 1 cm does this stamp cover? \_\_\_\_\_  
 So this stamp's area = \_\_\_\_\_ square cm
- (e) What is the difference in the area of biggest and smallest stamp? \_\_\_\_\_ square cm

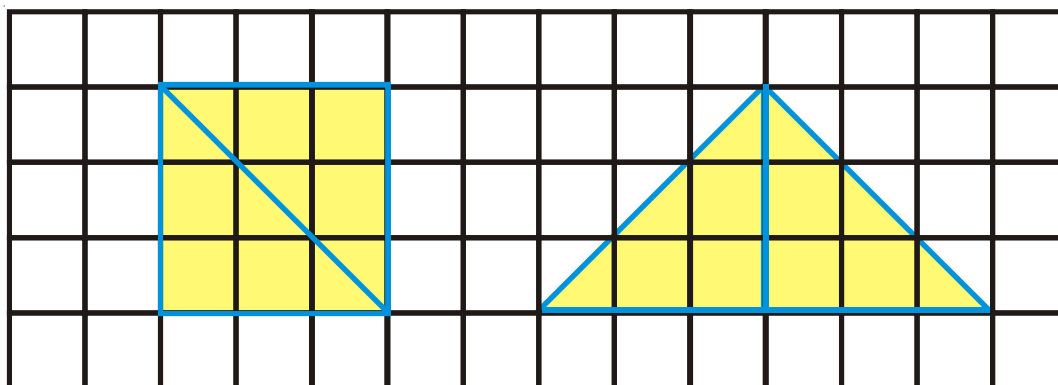
What is the area of the following figures drawn on the square sheet? Each square has side 1 cm. One has been done for you.

Hint : Two half squares make a whole square.



### Try This

1. Is the area of the square equal to the area of the triangle?

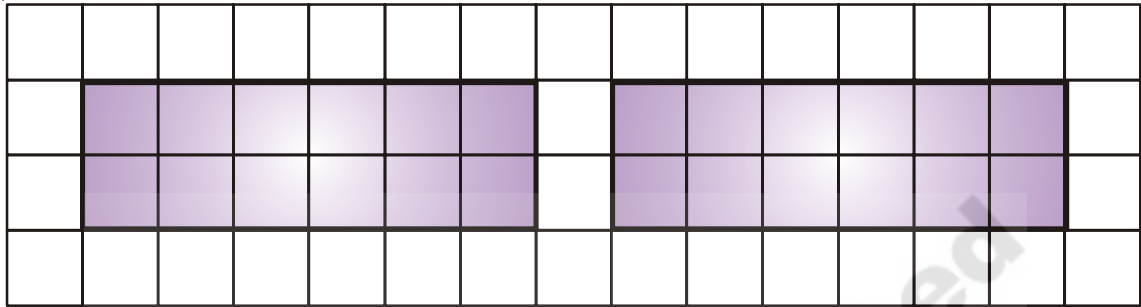


## Fun with rectangles

Divide rectangles into triangles and rectangles of equal area.

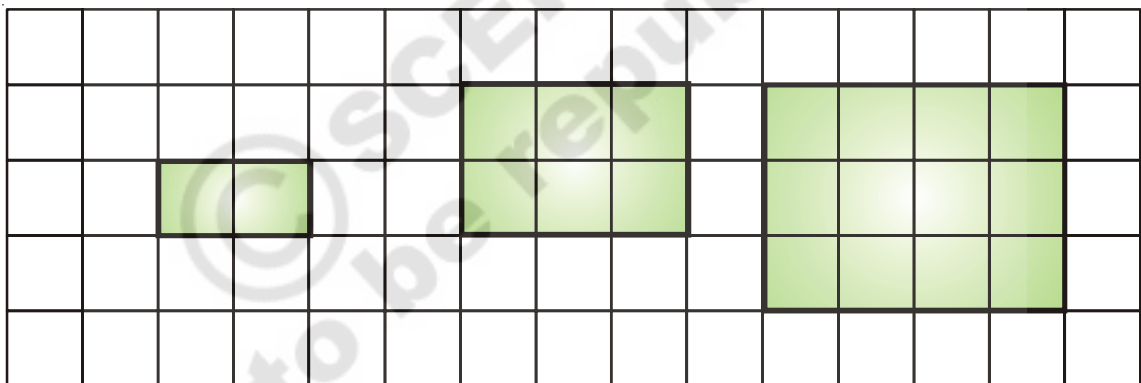
And do not forget to see how your friends have divided their rectangles.

- (a) Divide these rectangles into two smaller rectangles of equal area.



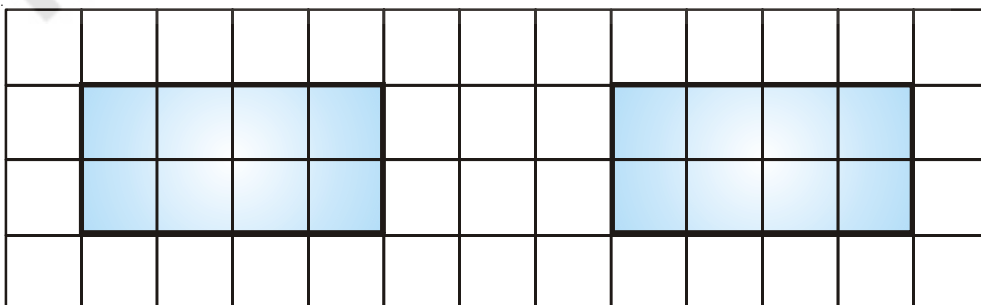
- (b) What is the area of the smaller rectangles?

- (a) Divide these rectangles into two triangles with equal area.



- (b) What is the area of the triangles?

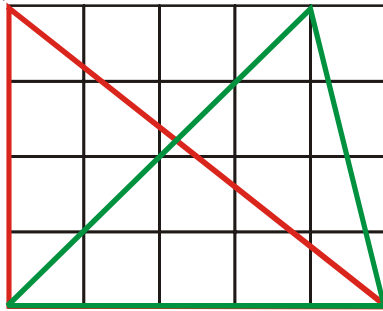
- (a) Divide these rectangles into four triangles with equal area.



- (b) What is the area of the triangles?

## Fun with Triangles

Madhu has divided the rectangle given below into 2 triangles.

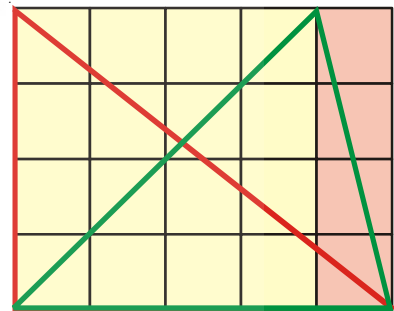


Both the triangles look different. Let's find out if their area is different?

The red triangle is half of the big rectangle. Area of the big rectangle is 20 square cm. So the area of the red triangle is \_\_\_\_\_ square cm.

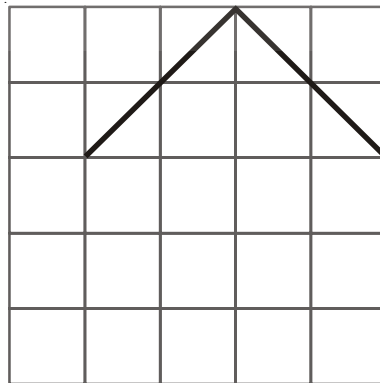
The green triangle contains halves of one square and one rectangle. Now you find the area of the square and rectangle and then the area of the triangle.

What is the area of the green triangle? \_\_\_\_\_



### Complete the shape according to its area

Sherya drew two sides of a shape. She asked Ravi to complete the shape with two more sides, so that its area is 8 square cm.



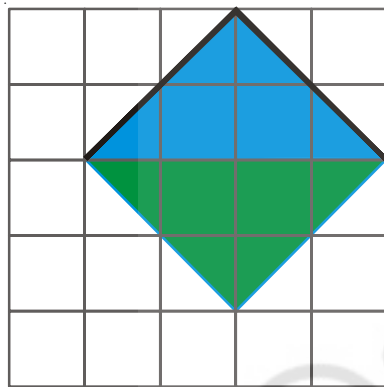
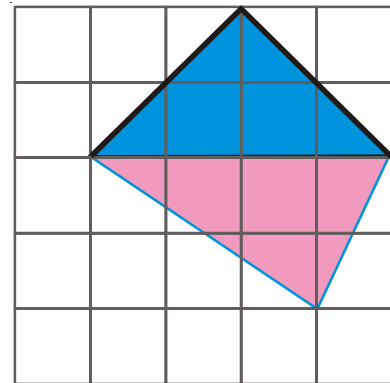
Ravi completed the shape like this.

(a) What is the area occupied by the blue triangle?

(b) What is the area occupied by the pink triangle?

Hint : The pink triangle contains halves of which two squares?

(c) Is the area of Ravi's shape 8 square cm?



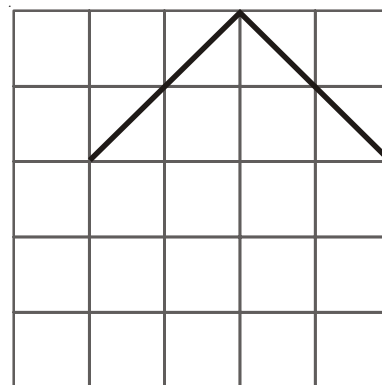
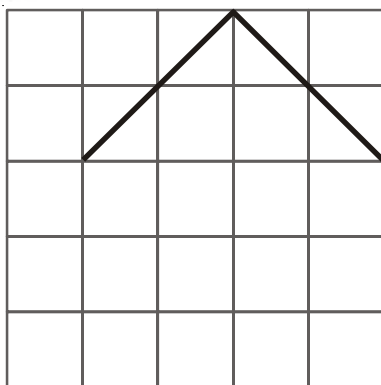
Oh, I thought of doing it differently! If you draw like this, the area is still 8 square cm.



(d) The green triangle contains halves of which two squares? Is the area of Sherya's shape also 8 square cm?

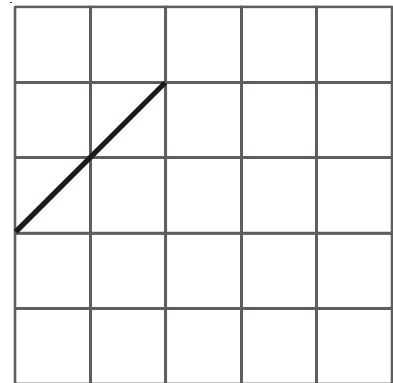
### Try This

1. Can you think of some other ways of completing the shape such that its area is 8 square cm?

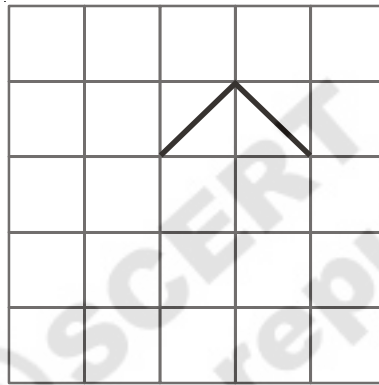


## Do This

1. This is one of the sides of a shape. Complete the shape so that its area is 6 square cm.



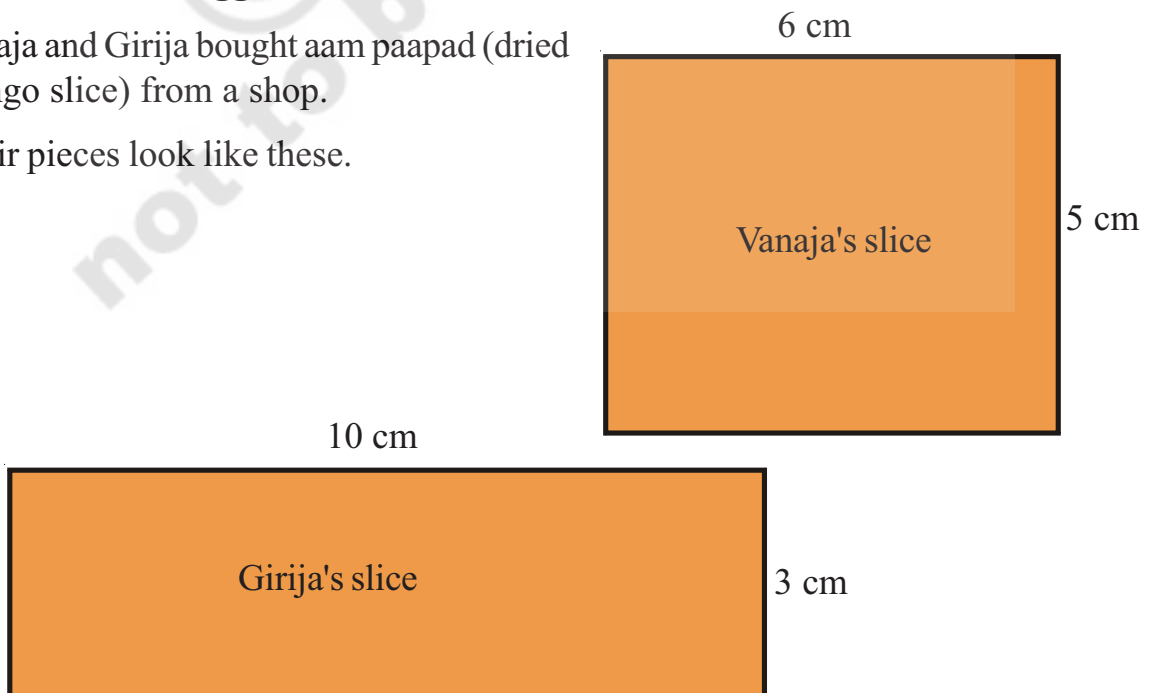
2. Two sides of a shape are drawn here. Complete the shape by drawing two more sides so that its area is 2 square cm.



### Whose slice is bigger?

Vanaja and Girija bought aam paapad (dried mango slice) from a shop.

Their pieces look like these.



Both felt that their peice was bigger than the other's. Can you think of some ways of finding out whether they are correct?

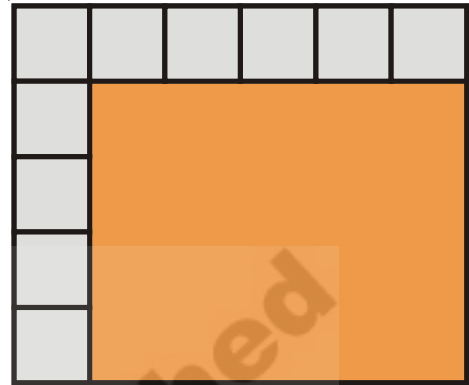
A friend of Vanaja and Girija showed one way, using small squares.

The length of Vanaja's slice is 6 cm.

So 6 squares of side 1 cm can be arranged along its length.

The width of Vanaja's slice is 5 cm.

So 5 squares can be arranged along its width.



Altogether how many squares can be arranged on the aam papad? \_\_\_\_\_

So the area of Vanaja's piece is = \_\_\_\_\_ square cm.

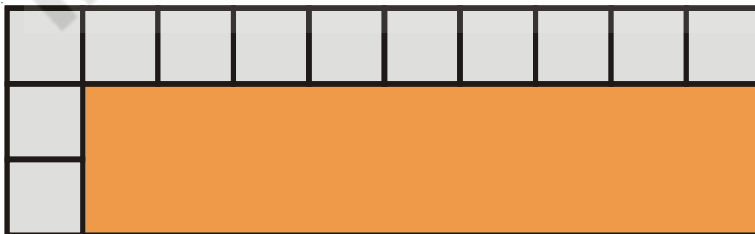
Vanaja : It's silly to count them all! Just multiply!

$$5 \times 6 = \text{_____ squares.}$$

In the same way find the area of Girija's piece.

What is the area of Girija's piece?

$$\text{_____} \times \text{_____} = \text{_____ squares}$$



Is Vanaja's piece bigger than Girija's?



### Cover with stamps

This stamp has an area of 4 square cm. Estimate, how many such stamps will cover this big pink rectangle.



### Check your estimate

- (a) How many stamps can be placed along the length of the pink rectangle?  
\_\_\_\_\_
- (b) Now, measure the length of pink rectangle. It is \_\_\_\_\_ cm long.
- (c) How many stamps can be placed along the width of the pink rectangle?  
\_\_\_\_\_
- (d) Now, measure how wide is the rectangle? \_\_\_\_\_ cm
- (e) How many stamps are needed to cover the rectangle? \_\_\_\_\_
- (g) What is the area of the rectangle? \_\_\_\_\_ square cm
- (h) What is the perimeter of the rectangle? \_\_\_\_\_ cm

### Area of bigger spaces

You must have seen a meter rod at the tailor's shop. You might have also used a meter rope to measure various lengths in school.

Now use a chalk and draw a square of length 1 meter at one corner of your classroom like Gita has done?

Estimate, how many such squares will cover the floor of your classroom?

What is the area of your classroom?  
\_\_\_\_\_ square meters.



### Try This

If you were to find the area of each of the the things written in the table below, which unit would you choose? Tick the correct option (✓).

|                   | Square<br>cm | Square<br>meter |
|-------------------|--------------|-----------------|
| Handkerchief      |              |                 |
| Sari              |              |                 |
| Page of your book |              |                 |
| School land       |              |                 |