Unit 10

AREA

One day the teacher came with some packets to the class and told Raju to arrange them on the table but ensure that no packets are kept on top of one another.

Raju saw that all the packets were alike. He started arranging the packets but after arranging 12 packets the surface of the table was totally covered.

Thus we can say that surface of the table = surface of 12 packets

Now tell :

- Why Raju was not able to arrange all the packets on the table ?
- If the packets would have been smaller then could have Raju arranged more than 12 packets ?
- If the packets would have been larger , then what would have happened ?

Measurement by matchbox:

Collect empty match boxes. Arrange these boxes on the surface of your book

How many boxes were arranged ? ––––––––
It means surface of book = ––––––––– Surface of boxes

If you have only one match box then can you measure the surface of your book? How will you measure? Measure and see.

In the first example the table was = the surface of the 12 packets.

In this way the surface of the book = …….. surface of match boxes.

The surface covered by any shape is called its surface area.

Like in the first example the surface area of the table is equal to the surface area of the 12 packets

Measure the surface of the items given below according to the instructions:

	Items	Measure by what	Measure of surface
1.	Surface of table	Book	——— Book
2.	Book	Match Box	
3.	Exercise Book	Match box	
4.	Calendars / chart	Page of the copy	
5.	Upper surface of box	Copy	

Compare your measurements with your friend's measurements. Did you find any difference ? Think and answer. Why and how did this happen ?

Measurement with bangles

You have seen arranging the matchboxes on the book. Now you try to arrange the bangles on the book.

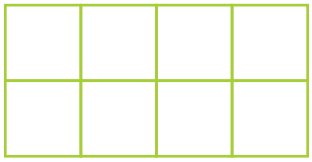
- How many bangles are arranged ? .....
- Is the surface of the book covered completely by bangles ?

  .....

- Was there any blank space while arranging the match boxes on the surface of the book
- Can bangle like shapes be used in measuring the area ?

Let's count the boxes and find out the area.

1 . &

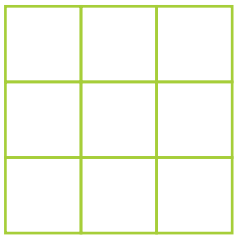


In this figure there are 8 boxes like this ☐ or (1 cm length 1 cm breadth)

Thus the area of this figure = 8 boxes

Tell the area of these figures in terms of small squares :

1.



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2.

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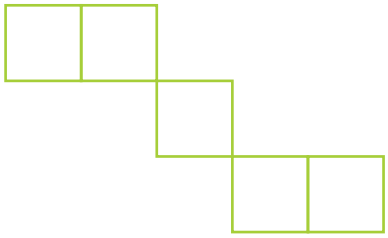

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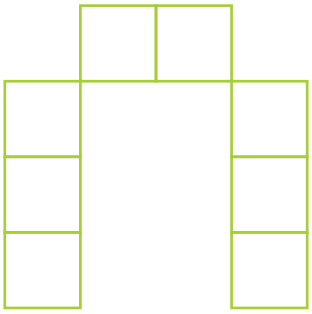
4.



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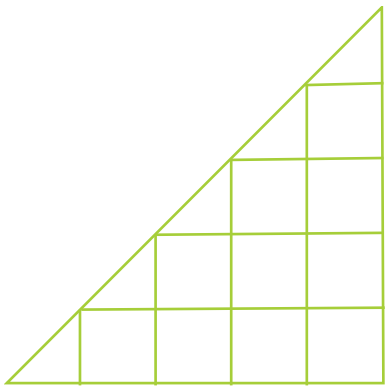
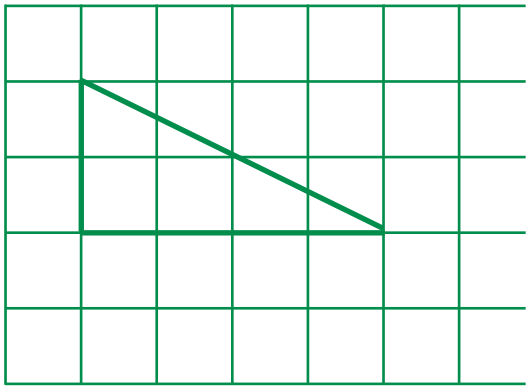


Can you tell the area of the figure given below by counting the boxes ?

Is there any problem ? Tell how can you find out the area of it ? If you cannot understand then take the help of your teacher.

What is the area of this triangle ?



Colour the boxes green which cover less than half the area in the triangle.

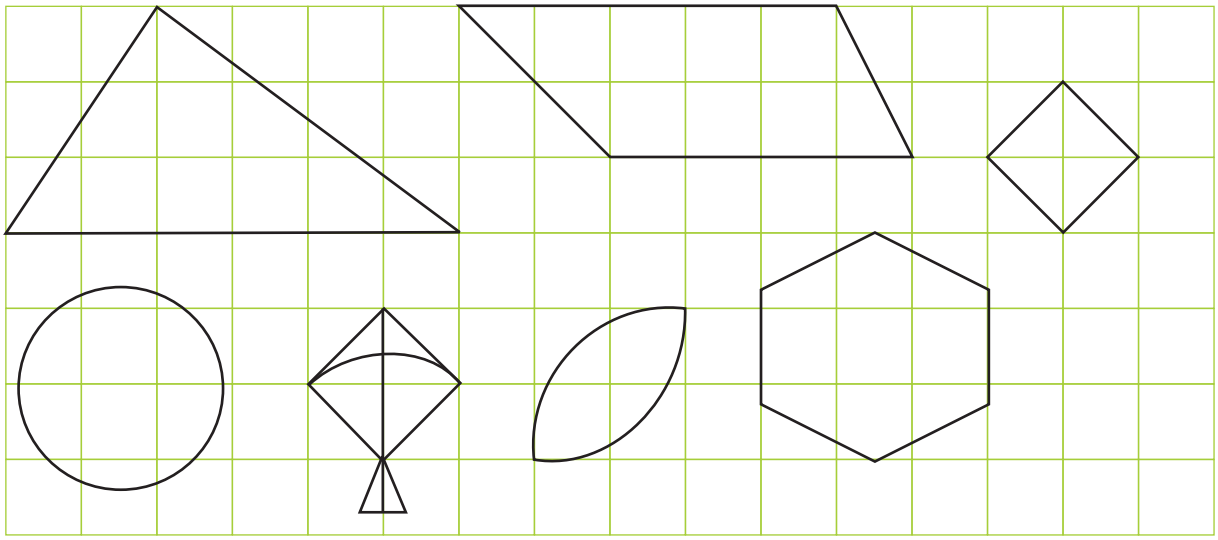
Now fill blue colour in the remaining boxes in the triangle.

The maximum portion inside the triangle is filled with blue colour, so we can say the area of the triangle is almost equal to the number of blue boxes.

Area of triangle = …….boxes

When we measure the area by counting boxes, then we do not count the boxes which cover less than half the area. We count the remaining boxes..

Now you tell the area by filling colours.



Area of a leaf

Collect some leaves. Keep the leaves on the grid drawn on the book and draw its outline. Now tell the area of each leaf by counting the boxes.

Leaf	Mango	Peepal	Palash
Area	————————	————————	————————

Can you find out the area of your palm. Use the boxes given above. Collect some items according to your wish and also find out there areas.