Chapter 6 Measuring Length

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Let Us Observe

1. Look at the picture. What are the students measuring? Put a tick mark (✔) if you find it being measured.
a) Length ____ c) Weight ____ e) Breadth ____
b) Height ____ d) Depth ____ f) Temperature ____
Solution:
b) Height
c) Weight
f) Temperature

2. What is being used to measure the height? What other tools can be used to measure height?
Solution:
A stadiometer is being used to measure the height. Some other tools to measure height include measuring tape, height rods etc.

3. Recall in Grade 3 you studied that lengths are measured in metres. Check and fill in the blanks whether the following are correct/incorrect for your classroom.
a) The height of most of the students in my grade is more than a metre. _____
b) The length of my arm is less than a metre. _____
c) The height of the door of the grade is less than a metre. _____
d) The breadth of the blackboard is more than a metre. _____
Solution:
a) Correct.
b) Correct.
c) Incorrect as classroom doors are typically around 2 metres high or more.
d) Correct.

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Let Us Do

1. Walk, Jump, and Crawl on 1, 5 and 10 m line.
Draw lines of 1 m, 5 m, and 10 m on the floor of the classroom or outside in the playground. How will you make these lines? Think and share with your friends. Walk, jump, and crawl on the lines.
Solution:
These lines of 1, 5, and 10 meters can be made by stretching ropes of the required lengths and laying them on the ground or floor of the classroom.

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2. Long Jump
Each child can participate in a long jump competition. How far have your friends jumped? Measure as accurately as possible using a combination of ropes. Who jumped the longest distance? Who has jumped the shortest?

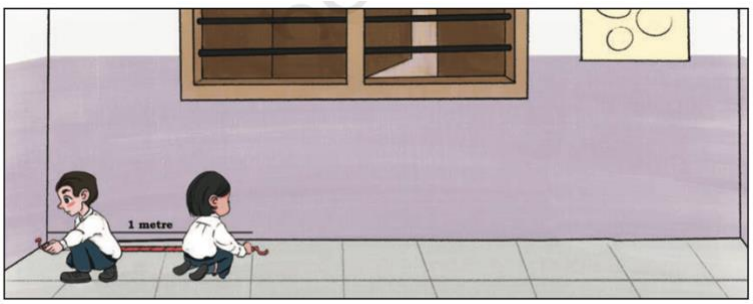
Name of the student	Estimated length of the jump			Actual measurement
	Less than 1 m	1 m	More than 1 m	

Solution:

Name of the student	Estimated length of the jump			Actual measurement
	Less than 1 m	1 m	More than 1 m	
Akshara	✓			0.75 m
Aditya			✓	1.25 m
Diksha		✓		1.02 m
Harsh		✓		1.10 m

Aditya jumped the longest and Akshara jumped the shortest.

3. Estimate how long and broad is your classroom. Measure and check.



Solution:
The length of my classroom is 9 m and the breadth is 7 m.

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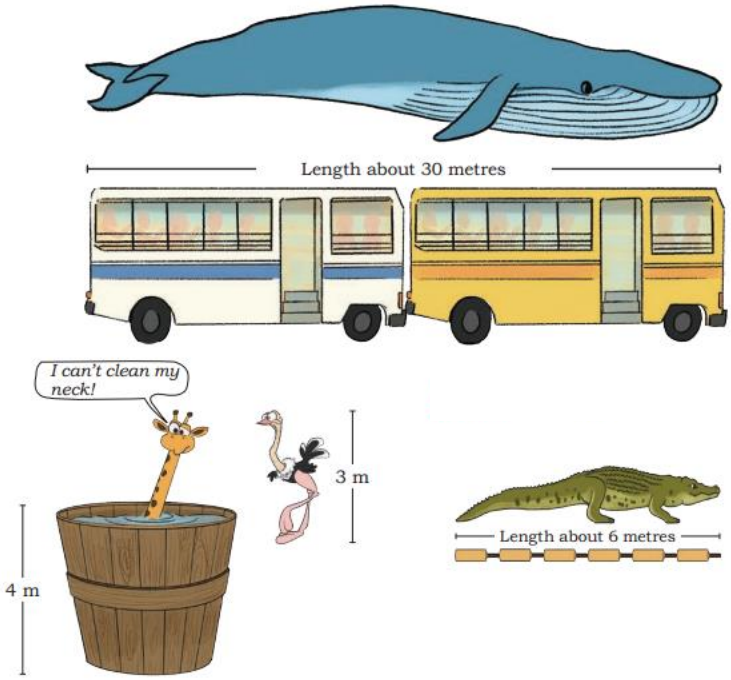
Let Us Think: Guess the Length



Look at the pictures carefully and answer the questions.
1. What is the length of one bus in metres? What is the length of one cricket bat in metres?
Solution:
Length of two buses combined = 15 metres.
Length of one bus = 30 ÷ 2 = 15 metres.
Length of one cricket bat = 1 metre.

2. How many buses would be equal to the length of two blue whales?
Solution:
Number of buses equal to the length of one blue whale = 2.

Number of buses equal to the length of two blue whales = 2 × 2 = 4.

3. How many cricket bats will be needed to measure one whale?
Solution:
Length of one cricket bat = 1 m
Length of whale = 30 m
Number of cricket bats needed to measure one whale = 30 ÷ 1 = 30 bats.

4. If two ostriches stand one above another, their height will be equal to the height of _____.
Solution:
Height of 2 ostriches = 2 × 3 = 6 m**.**
Thus, if two ostriches stand one above another, their height will be equal to the height of a crocodile .

5. How many crocodiles will be equal to the length of a blue whale?
Solution:
Length of crocodile = 6 m
Length of blue whale = 30 m
Number of crocodiles equal to the length of a blue whale = 30 ÷ 6 = 5 crocodiles.

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Let Us Observe

Q. 1 metre (m) = 100 centimetre (cm)
$\frac{1}{2}$ m =_____cm, $\frac{1}{4}$ m =_____cm
Solution:
$\frac{1}{2}$ m = $\frac{100}{2}$ = 50 cm.
$\frac{1}{4}$ m = $\frac{100}{4}$ = 25 cm.

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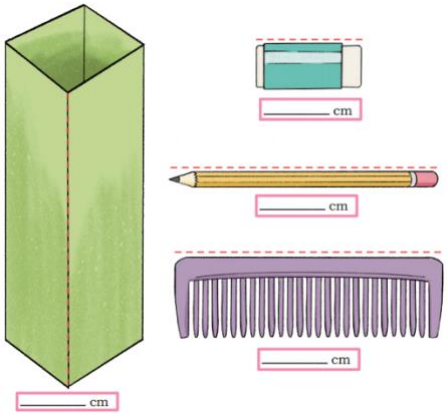
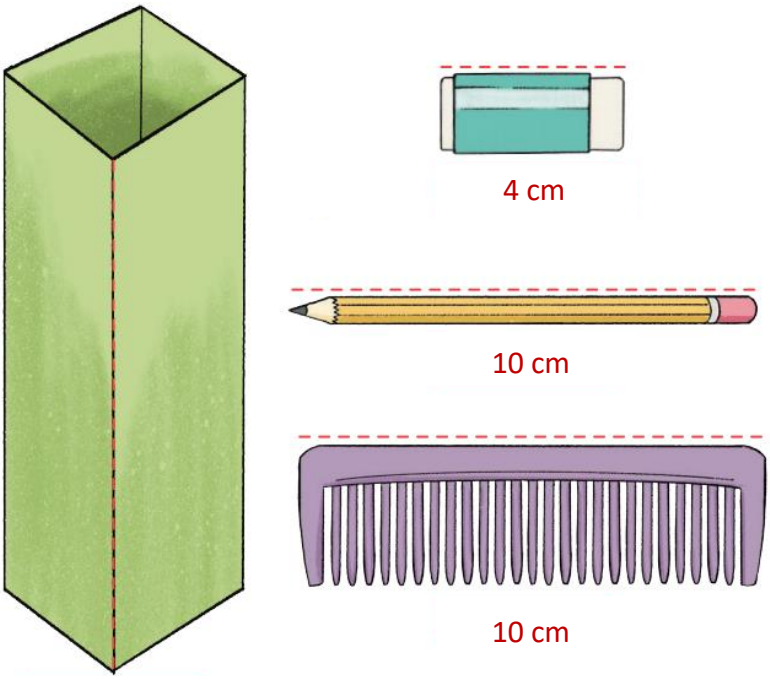
1. Measure each object using a scale.



Write the names of the objects in increasing order of length.

Solution:



Rubber < Pencil = Comb < Hollow tube.

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2. Estimate the lengths of the following and compare your responses with your friends, in the grade. Write some examples of things that can be lesser than or equal to 1 cm in length. Verify by measuring.

Length of items	Equal to 1 cm	More than 1 cm	Less than 1 cm	Actual measurement
A fingernail				
An eraser				
An ant				
A grain of wheat				
A rajma seed				

Solution:

Length of items	Equal to 1 cm	More than 1 cm	Less than 1 cm	Actual measurement
A fingernail			✓	
An eraser		✓		
An ant			✓	
A grain of wheat			✓	
A rajma seed		✓		

Do it yourself.

3. Take three toy cars and find out how far each one can go. You can use a small wooden ramp, or you might like to make a ramp using any material that you have.
Measure the distance each of your cars travels using measuring tape and write the answers in cm.

Car	Distance from the ramp	Rank
Car 1	_____ cm	
Car 2	_____ cm	
Car 3	_____ cm	

Solution:
Do it yourself.

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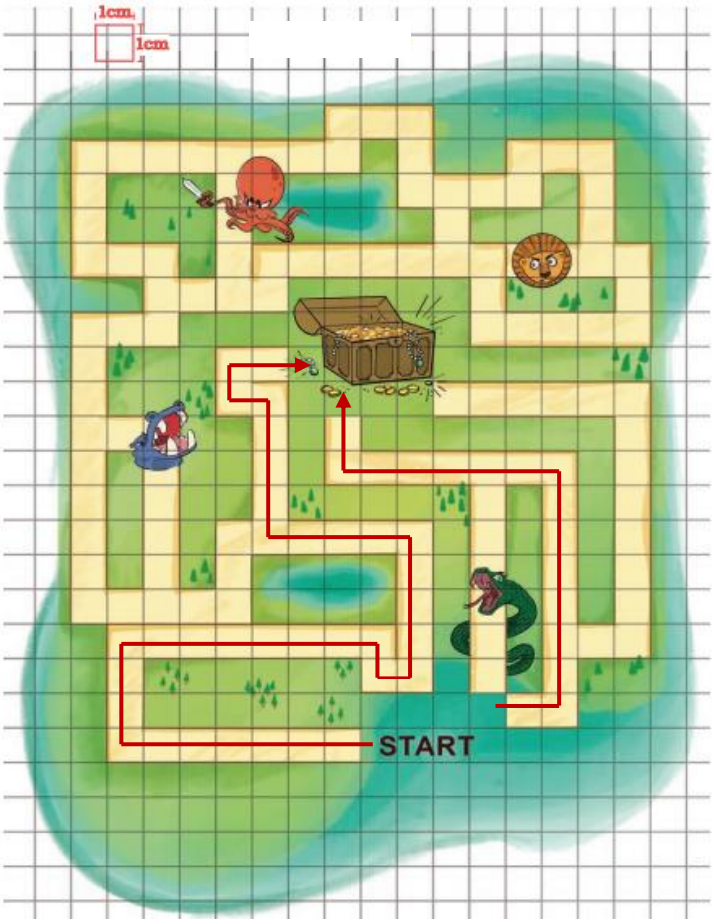
4. Find the longest and the shortest route in this treasure hunt. You can go around the obstacles but cannot jump over them. You can only walk on the yellow tiles and not on the grass. Can you find the length of your route in centimetres? Look for the 1 cm clue in the map.

Solution:



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5. Trace your hand on a piece of paper. Measure it using the scale.
Length of my hand = _____ cm

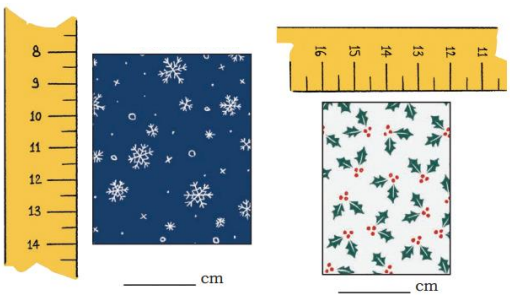
Solution:
Do it yourself.

6. Use your hand to estimate the measurement of any object. Convert into centimetres. Verify using the scale.

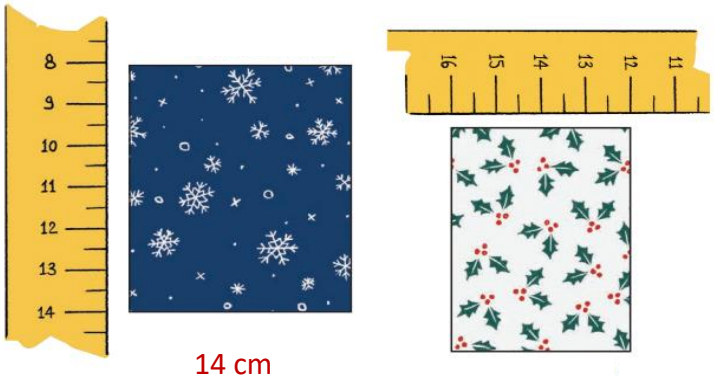
Object	Number of hands	Estimate using hand	Actual measure using the cm scale
1. Length of my textbook		_____ cm	_____ cm
2. Height of my chair		_____ cm	_____ cm
3. Width of my desk		_____ cm	_____ cm
4. Height of a flowerpot		_____ cm	_____ cm

Solution:
Do it yourself.

7. Ashwin's scale is broken. Can you help him to measure using this scale?



Solution:



14 cm

16 cm

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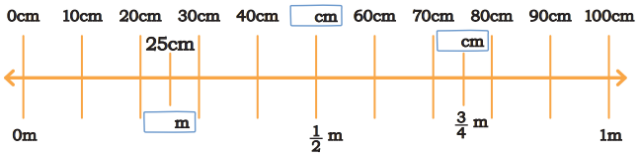
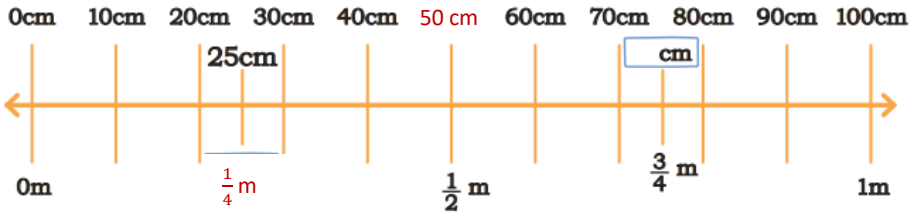
8. Fill in the blanks on the number line below appropriately.

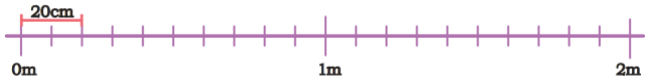


Solution:



25 cm = $\frac{25}{100} = \frac{1}{4}$ m.

9. The length of a board is 2 metres. Sonu has a decorative border sticker which is 20 cm long. How many such stickers are needed to cover the length of the board completely?



Solution:

Length of board = 2 metres = 2 × 100 cm = 200 cm.

Length of sticker = 20 cm.

Number of stickers needed to cover the length of the board = 200 ÷ 20 = 10 stickers.

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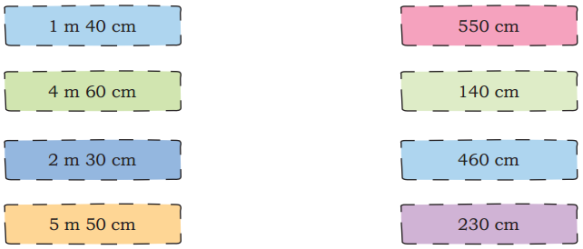
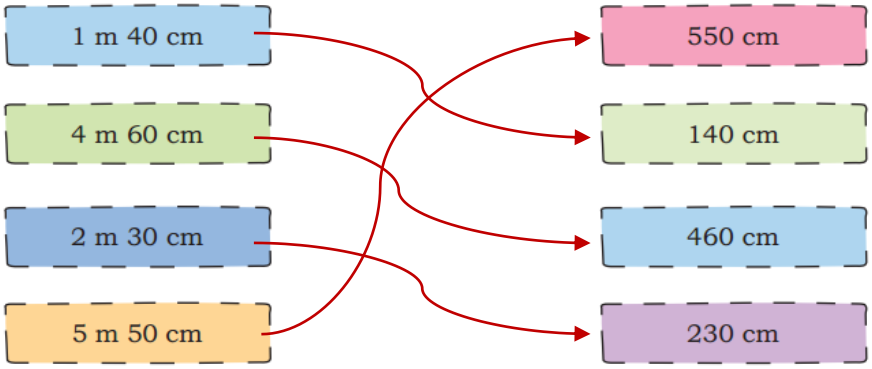
Let Us Do

1. The Village Sarpanch got the depth of some wells in his village measured by two different people.
a) Fill the blanks such that the depths are the same.
i) 2m = 200 cm
ii) ____ m = 400 cm
iii) 6 m = ____ cm
iv) ____ m = 800 m
Solution:
(i) 2 m = 2 × 100 = 200 cm
(ii) 4 m = 4 × 100 = 400 cm
(iii) 6 m = 6 × 100 = 600 cm
(iv) 8 m = 8 × 100 = 800 cm

2. Identify the wells with the same depth and match them.



Solution:



Let Us Explore

Activity: Students will measure their height using a measuring tape. Make a table in your notebook and complete it.

Name of the Student	Height in cm	Height in m

Answer the following questions.
1. Height of the tallest child is _____.
2. Height of the shortest child is _____.
3. Number of children who are more than 1 m tall _____.
4. Number of children who are shorter than 1 m _____.

Solution:
Do it yourself.

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Q. Bhola is making a boundary with bricks for his vegetable garden. Colour the bricks on the boundary. How many bricks will he need to make the boundary?

Solution:
He will need 21 more bricks to make the boundary.

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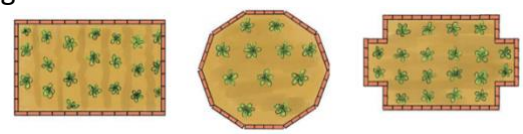
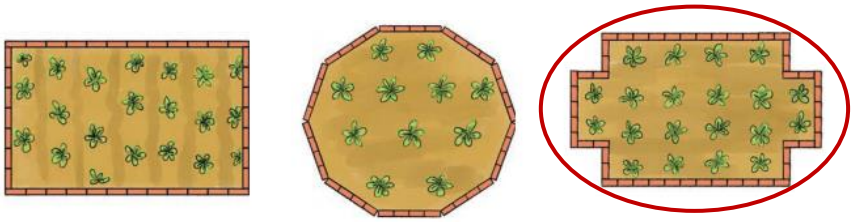
Let Us Do

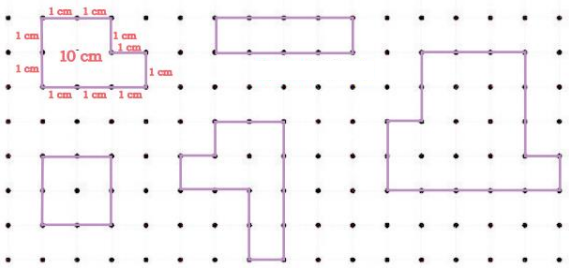
1. Bhola made the boundary of his gardens in the following ways. Circle the boundary that is longest.



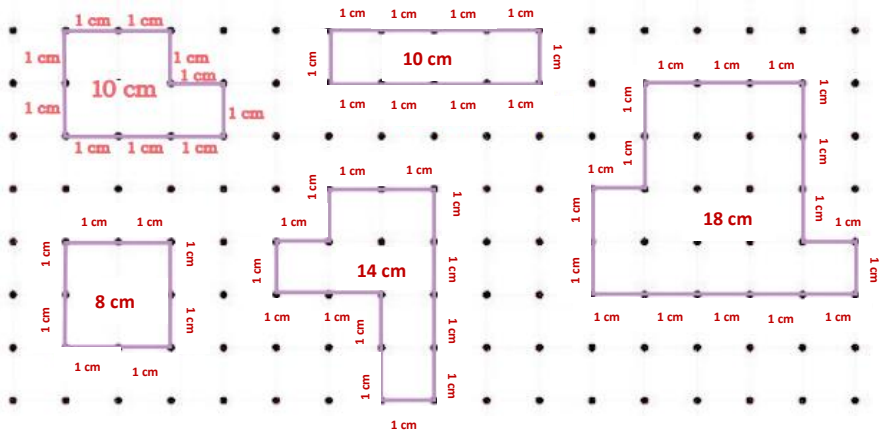
Solution:



2. Let us find the perimeter of some shapes using the dot grid. One is done for you.



a) Colour the boundary with the longest length in blue.
b) Colour the boundary with the shortest length in green.
c) Tick the shapes with the same length.
Solution:



From a – c, do it yourself.

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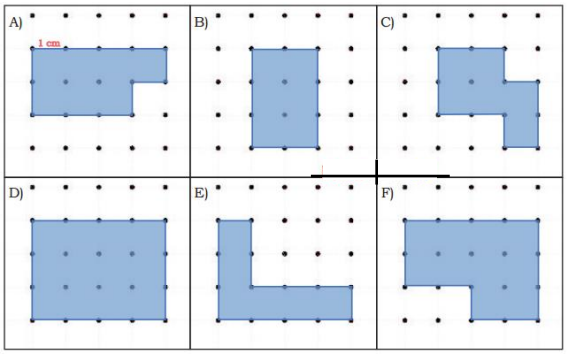
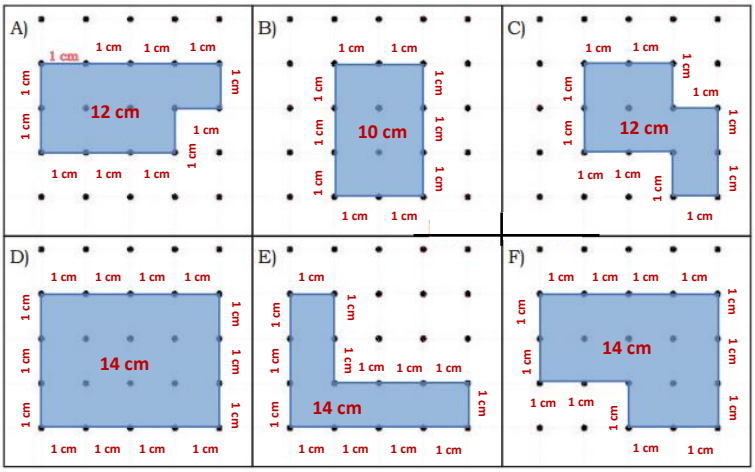
3. Do any of the following shapes have the same perimeter? Tick them.

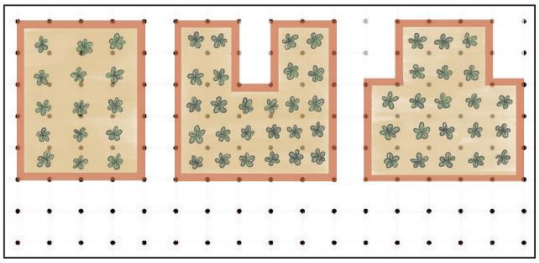


Solution:

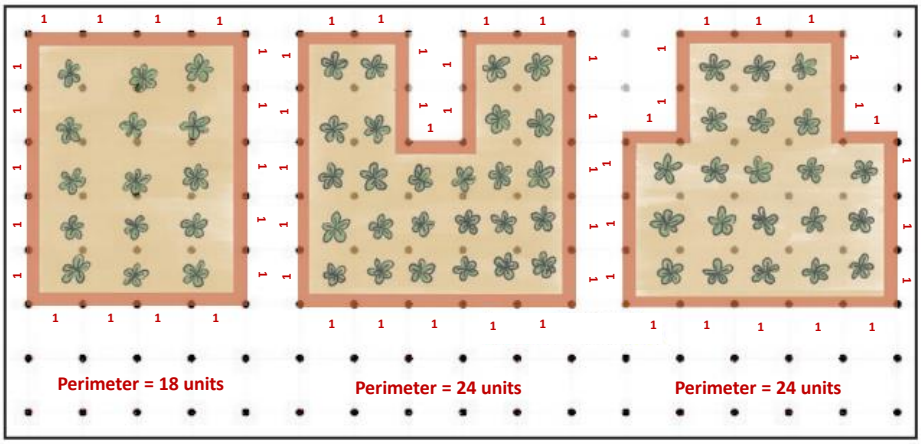


Figures A and C have the same perimeter.
Also, figures D, E and F have the same perimeter.

4. Tick the garden with the minimum perimeter.



Solution:



1st garden has the minimum perimeter.

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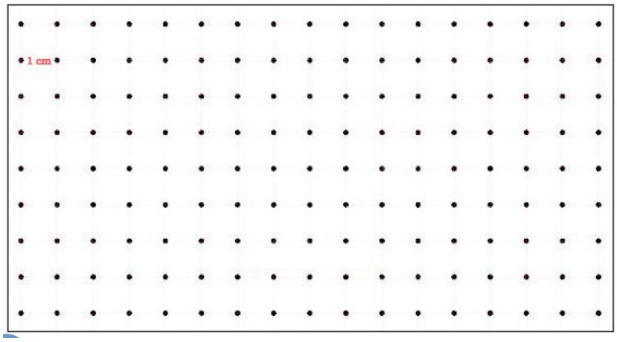
5. Estimate and measure the perimeters of shapes around you using a scale and write them in the space given below.

S. No.	Object	Estimated perimeter in cm/m	Actual measure in cm/m
1.	Desk		
2.	Blackboard		
3.	Classroom floor		
4.			
5.			
6.			

Solution:
Do it yourself.

6. Draw three different shapes with perimeter of 20 cm.



Solution:
Below are three different shapes with perimeter of 20 cm.