Lesson Plan

Perimeter and Area

―――

Summary

1. **Subject(s):**   MATHEMATICS
2. **Topic or Unit of Study:**   Mensuration: Perimeter and Area
3. **Grade/Level:**   2   (class 4 and 5)
4. **Objective:**
   a) Importance of Perimeter
   b) Importance of Area

What the child should know before: Numbers, Addition, Multiplication, Shapes

Mensuration

Perimeter (परिमिति)

Introducing with the importance of Perimeter

Fun activity

Bring a colourful tape and two books (of different size) along with you. Show them the books and tell them that you want to stick this colourful tape at the border and ask them to guess that for which book, more tape will be required? Ask them how will they calculate it?
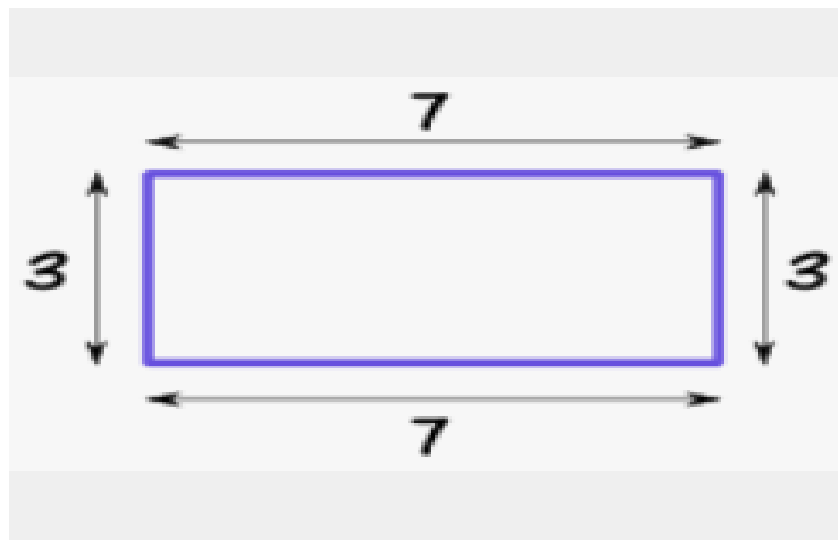
Fun video

Q. What is perimeter?

Perimeter is basically the sum of length of all sides of any given shape.

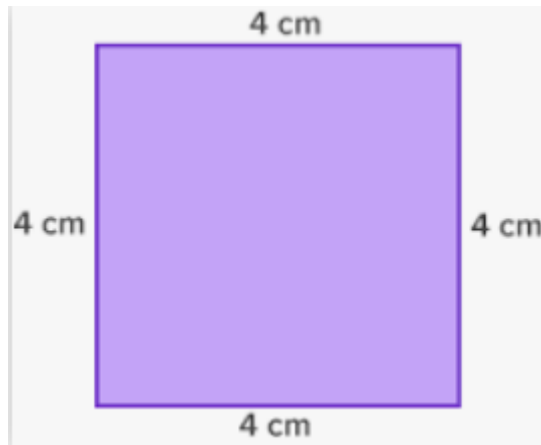So now let us try to calculate the perimeter of a rectangle:

Now according to the definition, the perimeter is the sum of length of all sides of any given shape. So what is the length of sides of the rectangle?

3cm ,7cm ,3cm and 7cm

So the **Perimeter** = 3+ 7+ 3+ 7
                   = 20

Similarly, we can also find the perimeter of a square and a triangle.
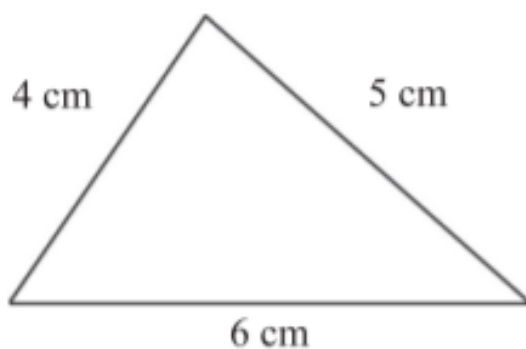
Let's take an example of a square:

Ask students to evaluate the length of each side of the square. And then calculate Perimeter

[4cm , 4cm , 4cm and 4cm]

So perimeter = 4 + 4+ 4+ 4

              = 4 * 4   **[4 times each side - since each side is equal]**

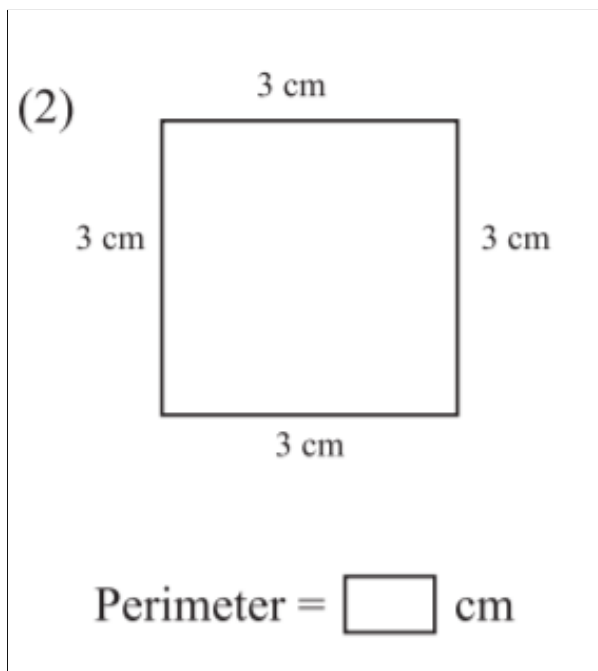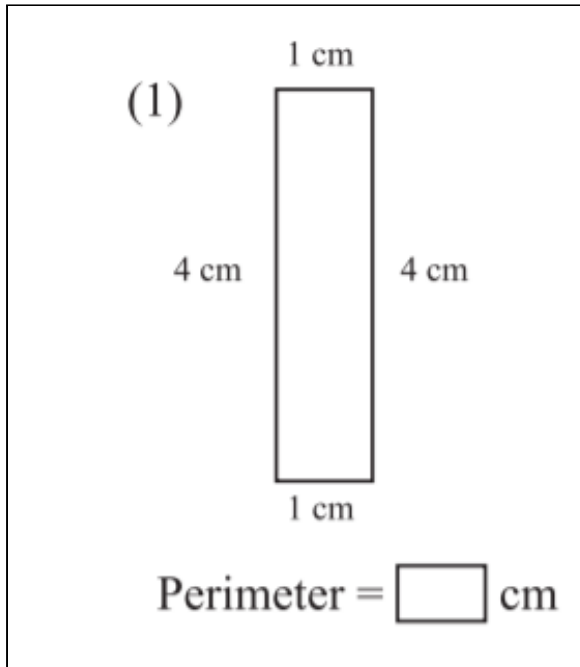   = 16

Can you try to find the perimeter of the given triangle?

Step1: Find the length of the sides of the shape.
So the lengths are: 4cm , 5cm and 6cm
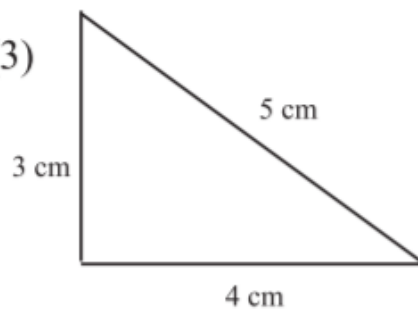Step 2: Now perimeter= 4 + 5+ 6

               = 15 cm

Practice Problem

Identify the shape and find its perimeter

(1)

1 cm

4 cm   4 cm

1 cm

Perimeter = ☐ cm

(2)

3 cm

3 cm   3 cm

3 cm

Perimeter = ☐ cm

(3)

5 cm

3 cm

4 cm

Perimeter = ☐ cm

(4)

7 cm

2 cm

2 cm

7 cm

Perimeter = ☐ cm

(5)

4 cm

3 cm   3 cm
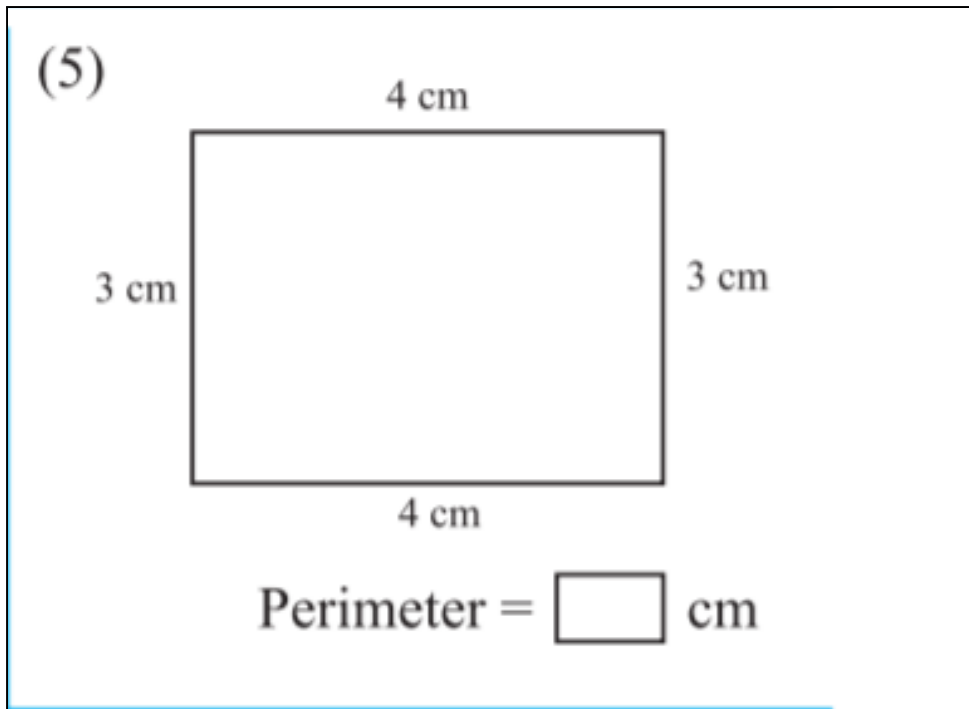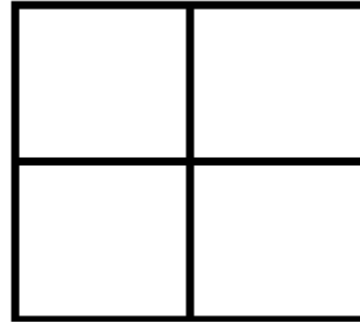
4 cm
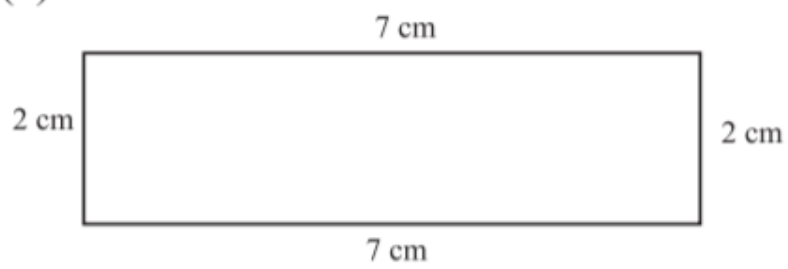
Perimeter = ☐ cm

Area (क्षेत्रफळ)

Introducing with the importance of Area

Todo: Make students curious about the concept of area- Why do we need the concept of area? Is perimeter not a sufficient parameter?

Start with giving an example. We can start with giving an example where a person wants to buy a house and he has recently studied the concept of perimeter. He gets two houses as shown below. Ask the student to calculate the perimeter of both the houses. Then ask the student which perimeter is greater.
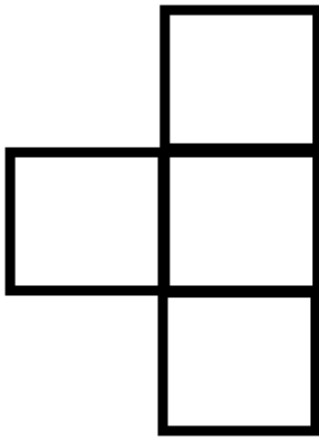
House 1: Perimeter = 10 units   House 2: Perimeter = 8 units

Question - Which is a bigger house? Is perimeter a good parameter for measuring surface
*[Answer = In spite of house 1 having a greater perimeter, both are only 4 squares units - both occupy 4 squares. So both the houses will occupy the same **area.**]*

What is Area?

Area of a figure basically is the measure of surface (place) occupied by a figure. We measure it by calculating the number of squares (of unit length) the figure occupies.

Fun video

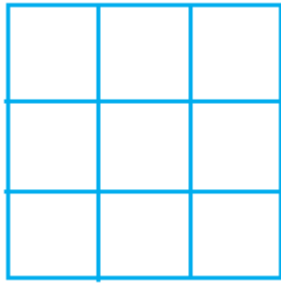https://www.youtube.com/watch?v=d_6XOBpoDz4&ab_channel=It%27sAumSumTime (the entire video)

Practice Problems

Let us calculate the area of the given figures [Just calculate the number of squares the figure occupies]
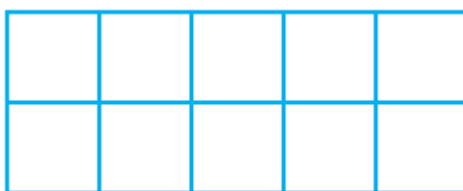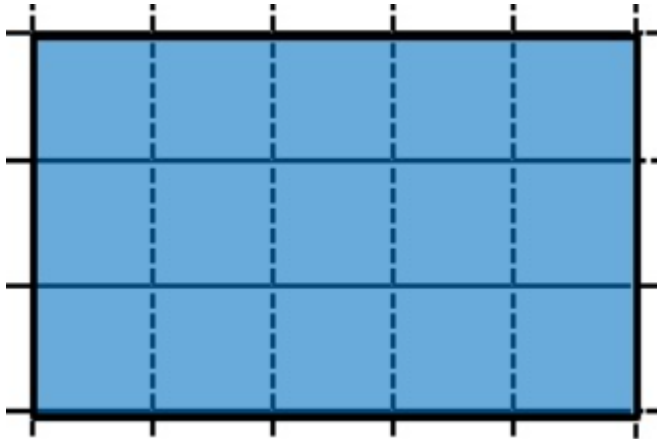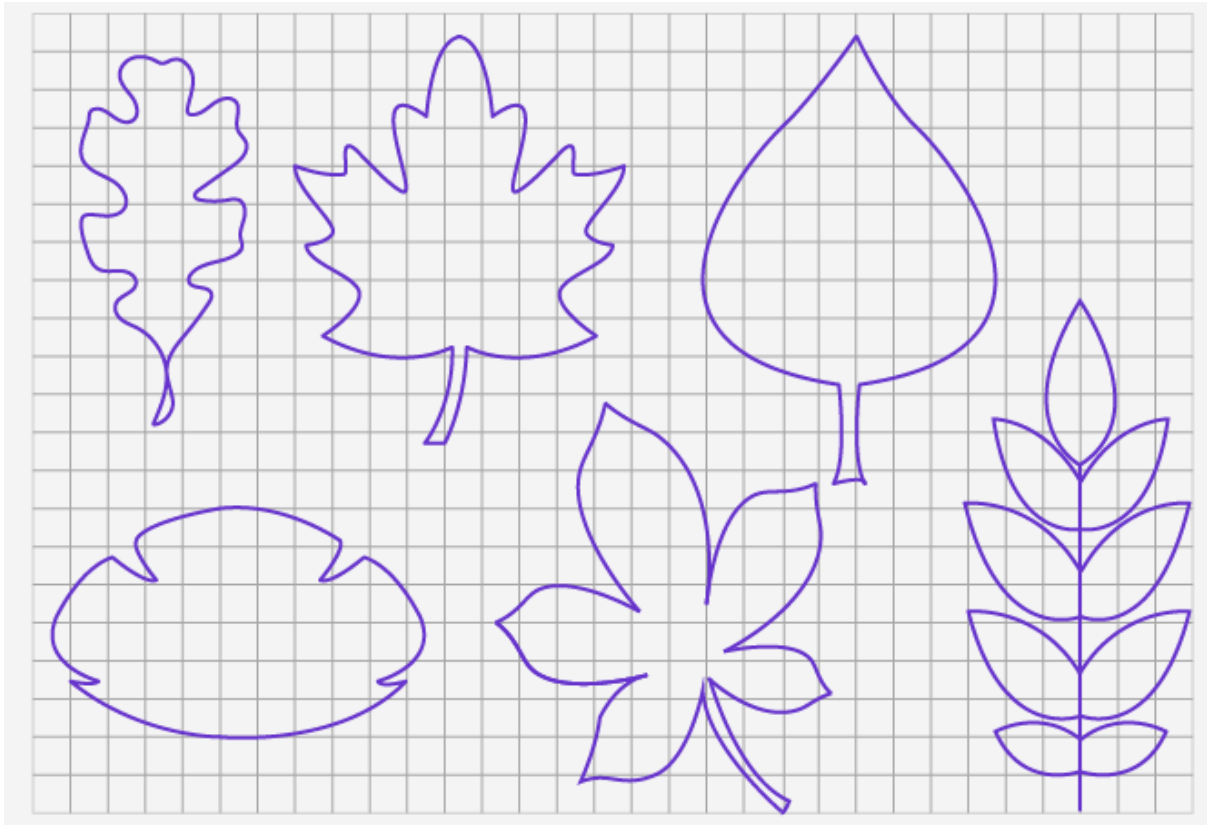

1.

2.

3.

Irregular shapes (Crude method)

Ask students to calculate the area of the given shapes.Ask them what difficulty they face while calculating area? Are they able to count the squares occupied by the figue?
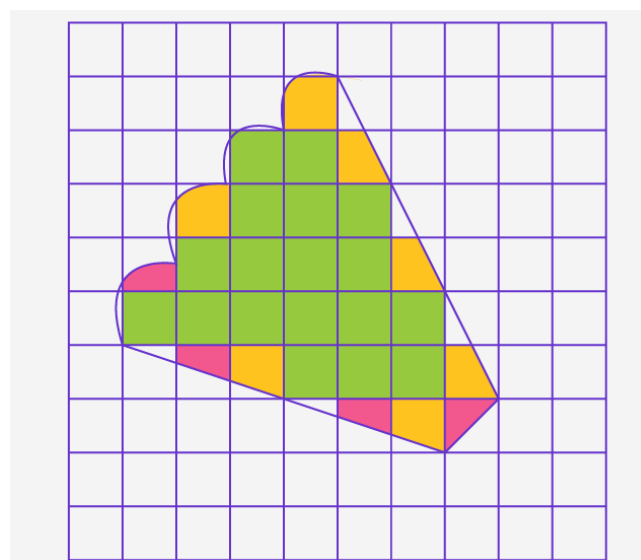
**Steps to calculate area of irregular shapes with curves**

Note: Use colour pencils or pens for marking half covered squares, full squares and other squares in the grid.

1. Divide the figure into square grids (squares of 1 unit)
2. Total number of unit squares falling within the shape will determine the measure of surface of the figure i.e the area
3. Count the square as "1" if the shaded region covers more than half while calculating the area

Practice Problems

Calculate area of the following figures

1.

2.
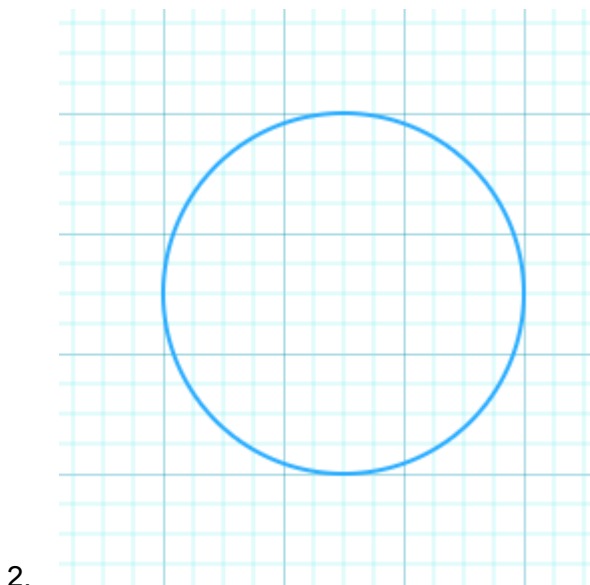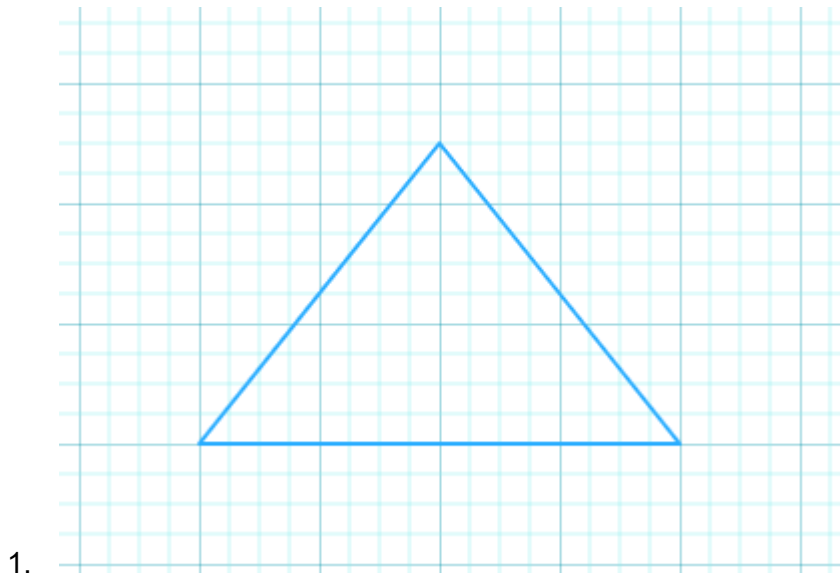
Testing activity

1. In order to fence a garden having a side of 5 metres, will you find the garden's perimeter or area? Find the value.

2. The cost of painting a wall is 1000 rupees per square metres. In order to calculate the total amount, will we find the perimeter or the area? **(tell them that you can guess it using the units)**

3. A girl is walking on a rectangular track in the garden having length= 500 metres and breadth= 200 metres. If the girl completes 3 rounds, then how much distance does she walk?

4. One flat is allotted 50 sq. metres for parking. You have to see if 10 such parking lots can be accommodated in the given space or not. What will you do?