

ACTIVITY NO - 12

Subject	Mathematics
Class	X
Chapter/Unit	Areas related to Circles
Topic	Area of a sector
Time	15 minutes
Nature of Activity	Individual

What will I learn (Learning Outcome)?

The sum of areas of three sectors of the same radii 'r' formed at the vertices of any triangle is $\frac{1}{2}\pi r^2$ by paper cutting and pasting.

Skills: Applying and Creating

What I have to do?

To verify that the sum of areas of three sectors of the same radii 'r' formed at the vertices of any triangle is $\frac{1}{2}\pi r^2$ by paper cutting and pasting.

What do I require?

Origami sheet/coloured papers, glue stick, geometry box, colour pens, a pair of scissors

What do I need to know?

Definition of a sector, Concept of different types of triangles, Area of circle.

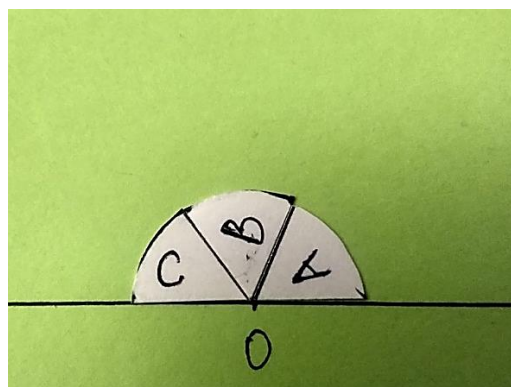
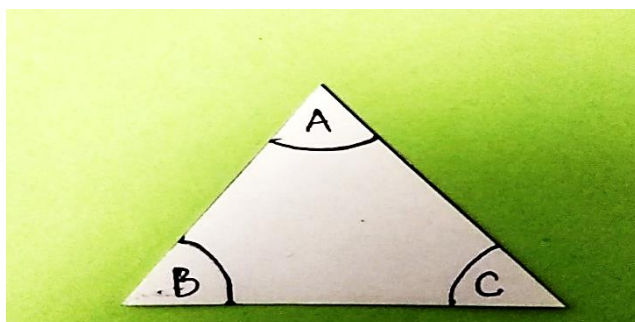
➤ Teacher's Activity

Teacher will draw the circle, sector of a circle, a triangle on the board and ask for their areas.

How will I proceed?

➤ Student's Activity

- 1) Draw a triangle ABC (Scalene/Isosceles/Equilateral) on a coloured sheet of paper and cut it.
- 2) Taking vertices A, B and C as centres of $\triangle ABC$, draw three sectors of same radii r.
- 3) Cut these three sectors and marked them as A, B and C.
- 4) Draw a straight line and mark any point 'O' on it. Place three sectors adjacent to each other so that the vertices A, B, C coincide with 'O' without leaving any gap.



What have I observed?

- 1) The shape of the three sectors arranged is _____
- 2) Area of three sectors together = _____

What have I learnt?

The sum of areas of three sectors of the same radii 'r' formed at the vertices of any triangle is _____

What am I curious to learn?

Prove that the sum of areas of four sectors of same radii 'r' formed at the vertices (as centre) of any quadrilateral is πr^2 .

Let me evaluate myself

- 1) What is the sum of the areas of three sectors of the same radii 'r' formed at the vertices of a Right triangle?

- 2) Vivaan divided a pizza of diameter 21 cm into 8 equal sectors and distributed them among his friends. Calculate:
 - a) The angle of each sector
 - b) Area of each sector
