ODM EDUCATIONAL GROUP
Changing your Tomorrow

ODM Teachers' Note

class	X	Subject	Mathematics	Plan	

Period	1	Chapter:12	Areas related to circles

Sub-Concept	Introduction, Perimeter and area of a circle.
Teaching Aids to be used	Audio-Visual Aids with **CCRE**

Learning outcomes	1.Students will be able to know the concept of area and circumference of circle. 2.Students will be able to use the concept of area and circumference of circle in daily life situations. 3.Students will be able to analyze word problems involving area and circumference of circle and find solutions.

SLNO	Step Wise (What to be done)
1. Int	Why study areas related to circles: https://youtu.be/cY4huPW85HU {6.52}
2.Pre	Problem solving on areas related to circles: ; https://youtu.be/NUhHyZjdzRU {8.03}
	1. The radii of the two circles are 19 cm and 9 cm respectively. Find the radius of the circle which has a circumference equal to the sum of the circumferences of the two circles.
	2. The radii of two circles are 8 cm and 6 cm respectively. Find the radius of the circle having area equal to the sum of the areas of the two circles
	3.The wheels of a car are of diameter 80 cm each. How many complete revolutions does each wheel make in 10 minutes when the car is travelling at a speed of 66 km per hour? 4. If the area of a circle is equal to sum of the areas of two circles of diameters 10 cm and 24 cm, calculate the diameter of the larger circle
3.Evl	**Evaluation Question.** 12.1. Q5.
4.HW	**Ex.12.1** Q.1 to Q 5., and AHA as follows
AQ	1.: The cost of fencing a circular field at the rate of ` 24 per meter is ` 5280. The field is to be ploughed at the rate of ` 0.50 per m2 . Find the cost of ploughing the field.

**CCRE- common class room equipment
**AHA- Additional Home Assignments (to be given to toppers)

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Class	X	**Subject**	Mathematics	**Plan**	
Period	2	**Chapter:12**	Areas related to circles		
Sub-Concept			Area of sector and segment of a circle		
Teaching Aids to be used			Audio-Visual Aids with **CCRE**		
Learning outcomes	1 Students will be able to know the meaning of major segment, minor segment, major sector and minor sector. 2.Students will be able to identify angle subtended by the sector at the Centre. 3. Students will be able to apply the knowledge of Area of sector and segment of a circle in solving real life problems.				

SLNO	**Step Wise (What to be done)**
1.Int	Area of sector and segment of a circle: https://youtu.be/w4OBwKd_cX0 {10.15} Problem solving: https://youtu.be/rqZJ40lS2zs {6.20}
2.Pre	1. Find the area of a sector of a circle with radius 6 cm if angle of the sector is 60^0.
	2. Find the area of a quadrant of a circle whose circumference is 22 cm.
	3. The length of the minute hand of a clock is 14 cm. Find the area swept by the minute hand in 5 minutes.
	4. A chord of a circle of radius 10 cm subtends a right angle at the Centre. Find the area of the corresponding: (i) minor segment (ii) major sector. (Use π = 3.14)
3.Evl	**Evaluation Question 5.** In a circle of radius 21 cm, an arc subtends an angle of 60° at the centre. Find: (i) the length of the arc (ii) area of the sector formed by the arc (iii) area of the segment formed by the corresponding chord.
4.HW	Ex. 12.2 Q. No 1 to 7. **AHA**
5.AQ	1.: A chord of a circle of radius 12 cm subtends an angle of 120° at the centre. Find the area of the corresponding segment of the circle. (Use π = 3.14 and $\sqrt{3}$ = 1.73)
	2.: Find the area of the sector of a circle with radius 4 cm and of angle 30°. Also, find the area of the corresponding major sector (Use π = 3.14).

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Class	X	**Subject**	Mathematics	**Plan**	
Period	3	**Chapter:12**	Areas related to circles		
Sub-Concept			Problem solving on Area of sector and segment of a circle.		
Teaching Aids to be used			Audio-Visual Aids with **CCRE**		
Learning outcomes	1.Students will be able to know the meaning of major segment, minor segment, major sector and minor sector. 2.Students will be able to identify angle subtended by the sector at the Centre. 3. Students will be able to apply the knowledge of Area of sector and segment of a circle in solving real life problems.				

SLNO	**Step Wise (What to be done)**
1.int	Problem solving on Area of sector and segment of a circle:
2.Pre	: https://youtu.be/wN3sjSVU0rY {10.20}
	1. A horse is tied to a peg at one corner of a square shaped grass field of side 15 m by means of a 5 m long rope . Find (i) the area of that part of the field in which the horse can graze. (ii) the increase in the grazing area if the rope were 10 m long instead of 5 m. (Use π = 3.14)
	2.A brooch is made with silver wire in the form of a circle with diameter 35 mm. The wire is also used in making 5 diameters which divide the circle into 10 equal sectors. Find: (i) the total length of the silver wire required. (ii) the area of each sector of the brooch.
	3.An umbrella has 8 ribs which are equally spaced. Assuming umbrella to be a flat circle of radius 45 cm, find the area between the two consecutive ribs of the umbrella
	4. A car has two wipers which do not overlap. Each wiper has a blade of length 25 cm sweeping through an angle of 115°. Find the total area cleaned at each sweep of the blades
3.Evl	Evaluation Question; A round table cover has six equal designs. If the radius of the cover is 28 cm, find the cost of making the designs at the rate of ` 0.35 per cm2 . (Use 3 = 1.7)
4.HW	HW- Ex. 12.2 Q.8 to 14 . **AHA**
5.AQ	1. To warn ships for underwater rocks, a lighthouse spreads a red coloured light over a sector of angle 60° to a distance of 12.5km. Find the area of the sea over which the ships are warned.

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Class	X	**Subject**	Mathematics	**Plan for**	
Period	4	**Chapter:12**	Areas related to circles		
Sub-Concept			Area of combined plane figures		
Teaching Aids to be used			Audio-Visual Aids with **CCRE**		
Learning outcomes	1. Students will be able to find the area of combined plane figures. 2.Students will be able to identify angle subtended by the sector at the Centre. 3. Students will be able to apply the knowledge of Area of sector and segment of a circle in solving real life problems.				

SLNO	**Step Wise (What to be done)**
1.int	Area of combined plane figures https://youtu.be/KwfYxUPpJEY {9.54}
	1.EX- 12.3 Q1.
	2. EX- 12.3 Q2.
	3.EX- 12.3 Q3
	. EX- 12.3 Q4
3.Evl	Evaluation Question; EX- 12.3 Q5.
4.HW	Ex. 12.3 Q 1 TO 6 **AHA**
5.AQ	1: From each corner of a square of side 4 cm a quadrant of a circle of radius 1 cm is cut and also a circle of diameter 2 cm is cut. Find the area of the remaining portion of the square.

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Class	X	**Subject**	Mathematics	**Plan for**	
Period	5	**Chapter:12**	Areas related to circles		
Sub-Concept			Area of combined plane figures		
Teaching Aids to be used			Audio-Visual Aids with **CCRE**		
Learning outcomes	1. Students will be able to find the area of combined plane figures. 2.Students will be able to identify angle subtended by the sector at the Centre. 3. Students will be able to apply the knowledge of Area of sector and segment of a circle in solving real life problems.				

SLNO	Step Wise (What to be done)
1.int	Area of combined plane figures https://youtu.be/vrXCfSg_-P0 {10.12}
	1.EX- 12.3 Q8.
	2. EX- 12.3 Q9.
	3.EX- 12.3 Q10
	. EX- 12.3 Q12
3.Evl	Evaluation Question; EX- 12.3 Q13.
4.HW	HW-. Ex 12.3 Q 7 to 16. **AHA**
5.AQ	1: Two circular flower beds are there on two sides of a square lawn ABCD of side 56 m. If the Centre of each circular flower bed is the point of intersection O of the diagonals of the square lawn, find the sum of the areas of the lawn and the flower beds.

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Class	X	**Subject**	Mathematics	**Plan for**	
Period	6	**Chapter-12**	Areas related to circles		

Sub-Concept	Recapitulation of the Chapter
Teaching Aids to be used	Audio-Visual Aids with **CCRE**

Learning outcomes	1.Students will be able to find the area of combined plane figures. 2.Students will be able to identify angle subtended by the sector at the Centre. 3. Students will be able to apply the knowledge of Area of sector and segment of a circle in solving real life problems.

SLNO	**Step Wise (What to be done)**
Simultaneous 6nteraction n and presentation in one go	Students will be asked to explain the formula Area of sector and segment of a circle. Necessary feedback is to be given at the end with the presentation of the video. Study note may be presented at the end with collection of HW copy. https://youtu.be/ZSp3WBrM9O0 {11.27} 1 . Find the area of a quadrant of a circle, where the circumference of circle is 44 cm. (Use π = 22/7] 2. Area of a sector of a circle of radius 14 cm is 154 cm^2. Find the length of the corresponding arc of the sector 3 ABC is a triangle right-angled at B, with AB = 14 cm and BC = 24 cm. With the vertices A, B and C as centres, arcs are drawn, each of radius 7 cm. Find the area of the shaded region. (Use π = 22/7) 4. All the vertices of a rhombus lie on a circle. Find the area of the rhombus, if the area of the circle is 1256 cm^2. [Use π = 3.14] 5. A chord of a circle of the radius 12 cm subtends an angle of 120° at the centre. Find the area of the corresponding segment of the circle. (Use π = 3.14 and √3 = 1.73). 6. arcs are drawn by taking vertices A, B and C of an equilateral triangle ABC of side 14 cm as centres to intersect the sides BC, CA and AB at BZ their respective mid-points D, E and F. Find the area of the shaded region. [Use π = 22/7 and √3 = 1.73]

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