

Pre-Content/content Post-Content	Learning outcomes/Objectives	
<u>Pre-Content</u> Recall • Circles and its related terms <u>Content</u> • Angles subtended by a chord at a point. • Perpendicular from the centre to a chord • Circle through three points. • Equal chords and their distance from the centre. • Angle subtended by an arc of a circle.	Students will be able to ✓ recall basic concepts related to circle and its parts. ✓ explore that the equal chords of a circle subtends equal angles at the centre and vice versa ✓ verify that the perpendicular from the centre of a circle to a chord bisects a chord and vice versa ✓ realise the fact that there is one and only one circle passing through three given non collinear points ✓ observe and justify that equal chords of a circle are equidistant from the centre and vice versa ✓ justify that the angle subtended by an arc at the centre is double the angle subtended by it at any point on the remaining part of the circle.	Students will be able to ✓ recall and define various concepts related to circles and its parts. ✓ explore and verify that the chords of a circle subtend equal angles at the centre. ✓ explore and verify that if the angles subtended by the chords at the centre are equal then the chords are equal ✓ explore and verify that the perpendicular from the centre of the circle to a chord bisects the chord ✓ explore and verify that the line drawn through the centre of a circle to bisect the chord is perpendicular to the chord ✓ justify that there exists a unique circle passing through three non collinear points. ✓ observe and justify that the equal chords of a circle are equidistant from the centre of a circle. ✓ observe and justify that chords equidistant from the centre of a circle are equal in length ✓ explore if two chords of a circle are equal then their corresponding arcs are congruent and vice versa ✓ observe and justify that the angle subtended by an arc at the centre is double the angle subtended by it at any point on the remaining part of the circle.

Teacher's Activity	Student's Activity	Teacher's observation and Remedial
Teacher will draw different figures related to parts of a circle and conduct an oral assessment based on their previous knowledge. explain the concept and give instructions to conduct of activity. ANNEXURE-1 explain the concept explain the concept and give instructions to construct circle through three points explain the concept and give instructions for the activity ANNEXURE-2 Explain the proof of the theorem	Students will get involved in thinking process and will share their ideas based on their previous knowledge and to define different parts of circle conduct the activity, write their observation and justify it with a supporting proof ANNEXURE-1 assimilate the concept ,and solve the problems given in the exercise follow the instructions and construct circle and complete the exercise given in NCERT assimilate the concept ,perform the activity and solve the problems given in the exercise ANNEXURE-2 assimilate the proof and apply to questions in the exercise	Teacher will write her/his observations after completion of the topic

Pre-Content/content Post-Content	Learning outcomes/Objectives	
<u>Content</u> - Cyclic quadrilaterals <u>Post Content</u> - Extra practice assignment based on HOTS	Students will be able to ✓ verify that the sum of either pair of opposite angles of a cyclic quadrilateral is 180 and vice versa ✓ develop higher order thinking skills	Students will be able to ✓ Verify that the sum of either pair of opposite angles of a cyclic quadrilateral is 180 ✓ Justify if the sum of a pair of a quadrilateral is 180, the quadrilateral is cyclic ✓ acquire problem solving skills by performing calculations to solve various problems

Home Work /Assignments

1. NCERT Exercise /solved examples given as home task
2. Questions from sample papers to solve
3. Selected questions from NCERT Exemplar

MONTH: NOVEMBER'20

TIME: POST MID TERM

Teacher's Activity	Student's Activity	Teacher's observation and Remedial
explain the proof of the theorem	assimilate the proof and apply to questions in the exercise	Teacher will write her/his observations after completion of the topic
give extra practice assignment	try to solve the problems given in the assignment	

Teaching Aids : Smart board, ICR, Cartesian Plane, Graph Paper

Methodology/Innovative Methods: Discussion, Question-Answer method, Activity, problem solving, Drawing skills

Interdisciplinary Links: Architecture, Interior Designing, Geometry and Real life Problems.

Faculty Head

Coordinator

Vice-Principal

Principal

ANNEXURE-1

ACTIVITY – CIRCLES

1. What we have to do?

To show that the equal chords of a circle subtend equal angles at the centre

What is required?

Coloured paper, Geometry kit

2. What do you need to know?

Drawing circles with any Centre and any radius, equal chords of a circle

3. How will you proceed?

- Draw a circle with of radius 5cm with centre O.
- Now draw two equal chords AB and CD
- Join OA, OB, OC, and OD such that two triangles AOB and COD are formed.
- Cut the two triangles and superimpose each other .

4. What have you observed?

Do the triangles cover each other completely? If yes, what does it imply?

What is the measure of angles so obtained?

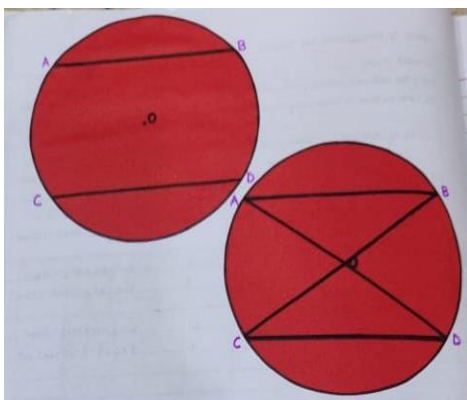
5. What have you learnt?

Equal chords subtend _____ angles at the _____

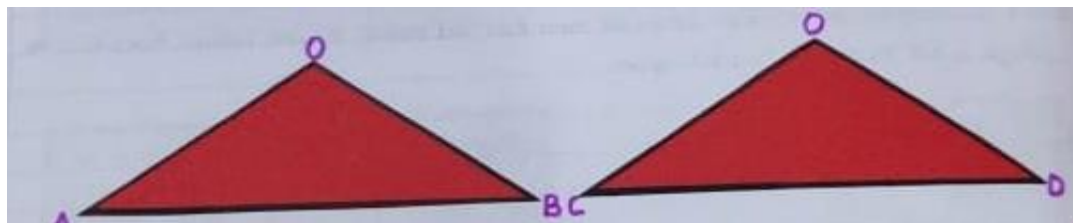
6. What would you be interested in doing?

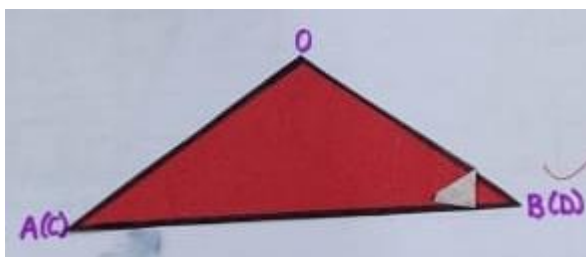
Draw a circle with centre O. Draw two angles $\angle AOB = \angle COD = 45^\circ$ such that A, B, C and D lie on the circle. Now measure the length of AB and CD.

Real life application :- Ferris wheel



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ANNEXURE-2

Subject	MATHEMATICS
Class	IX
Chapter/Unit	Geometry
Topic	Circles
Time	20 minutes
Nature of Activity	Individual

What will I learn(Learning outcome)?

To verify that equal chords of a circle are equidistant from the centre

Skills:- Constructing, Justifying ,Applying

What I have to do?

To verify that equal chords of a circle are equidistant from the centre using paper cutouts.

What do I require?

Coloured paper, a pair of scissors, ruler

What do I need to know?

Chords of a circle, Drawing perpendicular from the centre to the chord

➤ Teacher's Activity

The teacher will explain the concept and ask them to verify the same by cutting a circle and making equal chords by paper folding and finding the length of perpendiculars dropped on it from the centre .

How will I proceed?

➤ Student's Activity

- Cut a circle from the coloured paper with centre O
- Make two equal chords by paper folding and name it as AB and CD
- Drop perpendiculars OP on AB and OQ on CD from centre O
- Measure the length of OP and OQ

What have I observed?

Length of OP = _____

Length of OQ = _____

What have I learnt?

Equal chords are _____ from the centre.

What am I curious to know?

To verify that chords equidistant from the centre are equal.

Let me evaluate

1. If BC is a diameter of a circle of centre O and OD is perpendicular to the chord of a circle, show that $CA = 2OD$

2. Prove that the line segment joining the midpoints of two equal chords of a circle make equal angles with the chords
