# Chapter - 11 Geometry - Circle - Angles in the Same Segment of a Circle are Equal

## Objective :

Using Geogebra, The students will be able

- to identify and use required tools to draw triangle inside a circle
- to Prove Angles in the Same Segment of a Circle are Equal

**Skills to be attained :** To draw two triangle inside Same Segment of a circle using GeoGebra tools

**Tools/website/Resources:** GeoGebra

**Teacher led instruction:**

**Draw a Circle → Draw a Chord → Draw a triangles ABC and ABD → Show angles $\angle C$ and $\angle D$ → Find Faces, Vertices, and Edges**

**Open** : Start GeoGebra on your computer or use the web version at geogebra.org. Right click on the graphics view, hide the axis and grid.

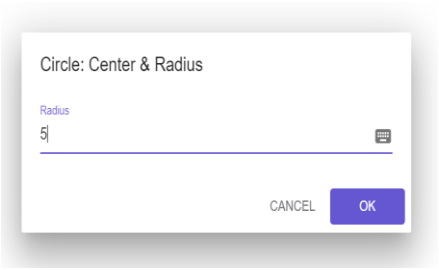
**Understanding the Theorem:**

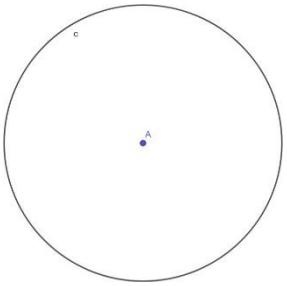
This theorem states that if two angles are inscribed in a circle and intercept the same arc, then the two angles are congruent.

**Step 1:Draw a Circle**

- Circle with Centre and Radius tool → enter 5 as its radius → click ok.

- Centre label renamed as a O.

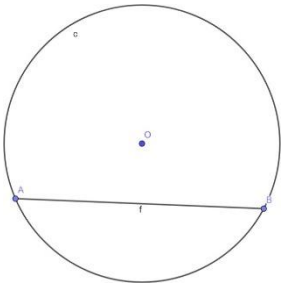




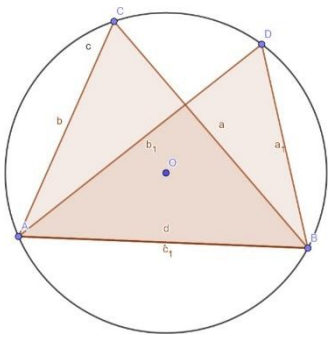
**Step 2: Draw a Chord:**

- Select the line segment tool and click any two points on the circle.
- The chord AB will appear.



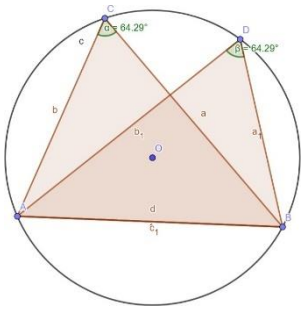

**Step 3: Draw a triangles ABC and ABD**

- Select the polygon tool, then click points A, B and any one point on the circle circumference, finally last click on the point A.
- Now triangle ABC appears in the circle.
- Similarly, Select the polygon tool, then click points A, B and other than point C, choose any one point on the circle circumference, finally click on the point A



**Step 4: Show angles $\angle C$ and $\angle D$**

- Select the Angle tools, click on the sides of triangle AC and BC.
- Similarly, Select the Angle tools, click on the sides of triangle AD and BD.




**Student Activity:**

- Students open GeoGebra and Create this applet
- Students Select the move tool, by click and drag or move vertices C or D
- we can observe the angles of $\angle ACB$ and $\angle ADB$ are always the same in the circumference of the circle.
- To prove The angle subtended by an arc of the circle at the centre is double the angle subtended by it at any point on the remaining part of the circle

**Conclusion :**

- Recap all the tools learned in the class.
- Encourage the students to explore a fundamental geometric principle with applications in real life.