

MATHEMATICS PROJECT

CLASS: 10B

TOPIC: ANGLE AT THE CENTRE OF A CIRCLE IS TWICE THE ANGLE SUBTENDED ON THE REMAINING PART OF THE CIRCLE

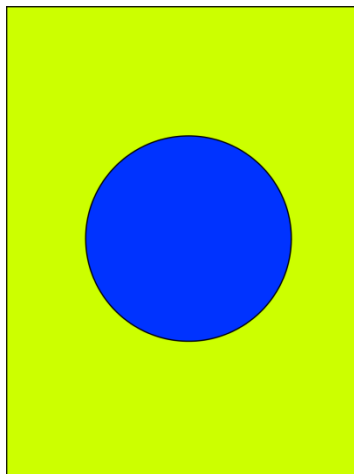
OBJECTIVE: To verify that the angle subtended by an arc at the centre of a circle is twice the angle subtended by the same arc at any other point on the remaining part of the circle, using methods of paper cutting, pasting and folding.

MATERIALS REQUIRED:

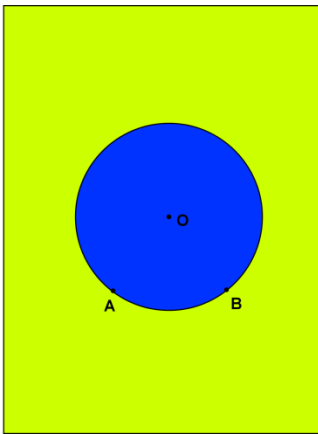
1. Geometry box
2. Practical workbook
3. Coloured chart papers – yellow, blue and red
4. Scissors
5. Scale
6. Sketch pen
7. Adhesives or glue sticks
8. Tracing papers – 2

PROCEDURE:

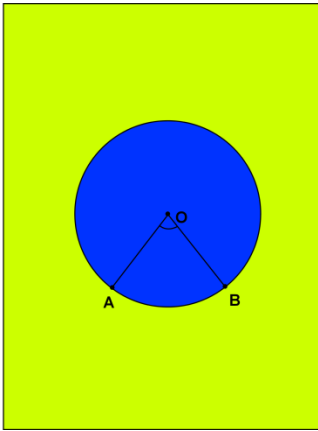
1. Draw a circle of 5 cm radius on a blue coloured chart paper. Use black sketch pen for drawing.
2. Cut out the circle.
3. Take a yellow chart paper. Cut it in the size of an A4 sheet and paste the circle on it.



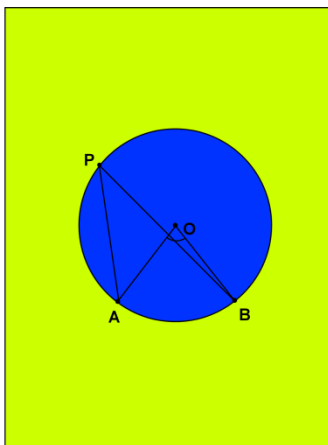
4. Take two points A and B on the circle to obtain the arc AB.



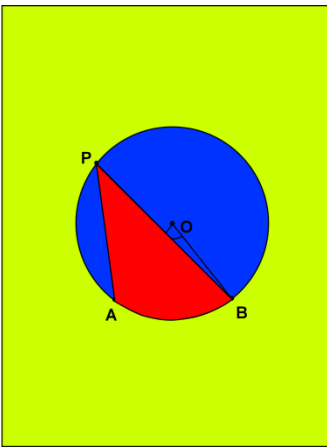
5. Form a crease joining OA (by folding) and draw OA.
6. Form a crease joining OB (by folding) and draw OB.



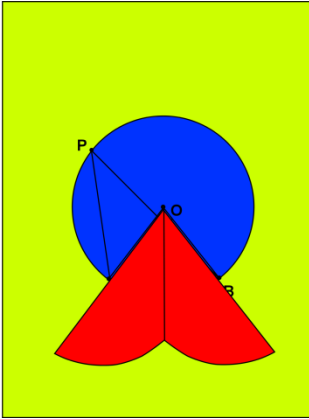
7. Arc AB subtends $\angle AOB$ at the centre O of the circle.
8. Take a point P on the remaining part of the circle
9. Form a crease joining AP (by folding) and draw AP.
10. Form a crease joining BP (by folding) and draw BP.
11. Arc AB subtends $\angle APB$ at the point P on the remaining part of the circle.



12. Place tracing paper on the circle and draw a replica of the $\angle APB$. Prepare two such replicas of $\angle APB$ with green or red chart papers.



13. Place the replicas adjacent to each other on $\angle AOB$



RESULT:

It is noted that the two replicas placed adjacently completely cover $\angle AOB$. $\therefore \angle AOB = 2\angle APB$

LAST DATE OF SUBMISSION OF PROJECT: 28th November, 2014

TOPIC: VERIFICATION OF ALTERNATE SEGMENT THEOREM

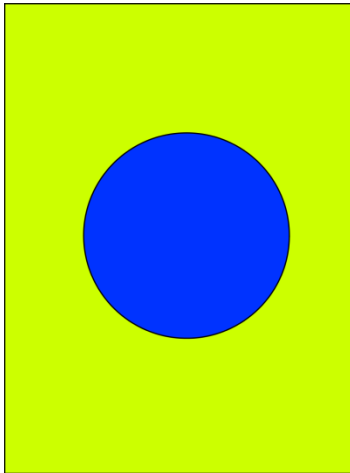
OBJECTIVE: To verify that: If a line touches a circle and from the point of contact a chord is drawn, the angles between the tangent and the chord respectively are equal to the angles in the corresponding alternate segments.

MATERIALS REQUIRED:

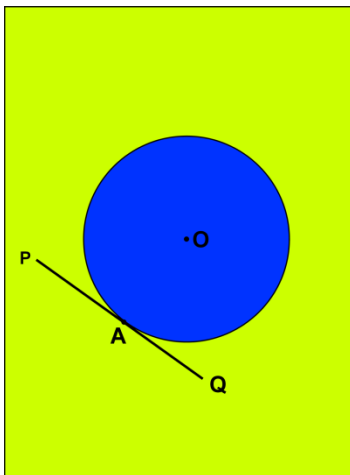
1. Geometry box
2. Practical workbook
3. Coloured chart papers – yellow, blue and red
4. Scissors
5. Scale
6. Sketch pen
7. Adhesives or glue sticks
8. Tracing papers – 2

PROCEDURE:

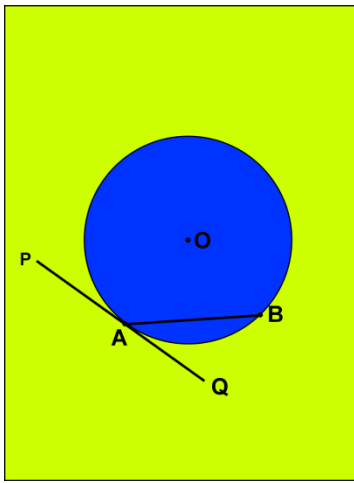
1. Draw a circle of 5 cm radius on a blue coloured chart paper. Use black sketch pen for drawing.
2. Cut out the circle.
3. Take a yellow chart paper. Cut it in the size of an A4 sheet and paste the circle on it.



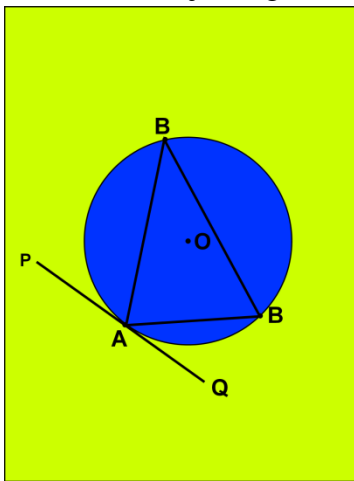
4. Fold the sheet in such a way that it just touches the circle at A. Unfold the paper and draw the tangent PQ.



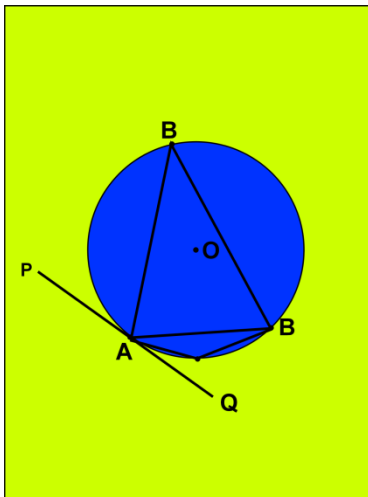
5. Fold the paper starting from A such that the chord AB is obtained. Draw AB.



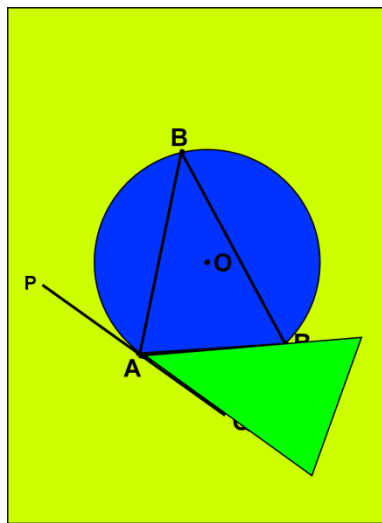
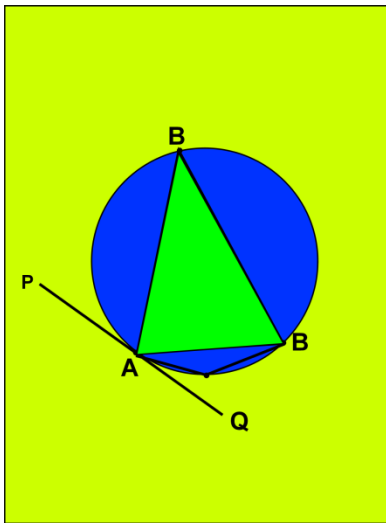
6. $\angle BAP$ and $\angle BAQ$ are the angles formed between the chord AB and the tangent PQ.
7. Take a point C on the major arc. Form a crease joining AC. Draw AC.
8. Form a crease joining BC. Draw BC.



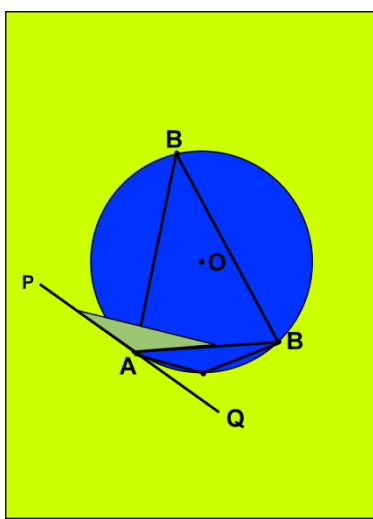
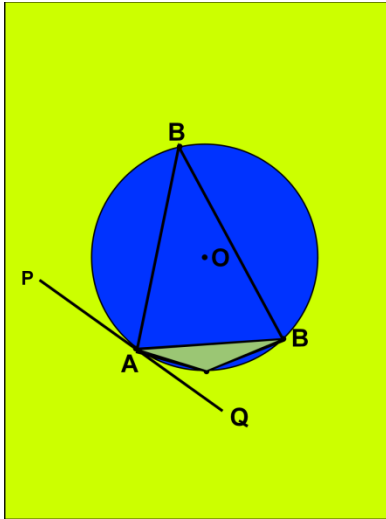
9. Take a point D on the minor arc. Form a crease joining AD. Draw AC.
10. Form a crease joining BD. Draw BD.



11. Make a replica of $\angle ACB$ using a tracing paper. Place it on $\angle BAQ$.



12. Make a replica of $\angle BDA$ using a tracing paper. Place it on $\angle BAP$.



RESULT:

It is noted that $\angle BAP$ and $\angle BAQ$ are the angles formed between the chord AB and the tangent PQ . $\angle BAQ$ is completely covered with $\angle ACB$ and $\angle BAP$ is completely covered with $\angle ADB$. Thus the theorem is verified.

LAST DATE OF SUBMISSION OF PROJECT: 28th November, 2014