

SUBJECT : MATHEMATICS

Class X

TOPIC : CONSTRUCTIONS

Pre-Content/content Post-Content	Learning outcomes/Objectives	
	General	Specific
<u>Pre-Content</u> Bisecting an angle, constructing perpendicular bisector of a line segment and construction of triangles <u>Content</u> Division of a line segment in a given ratio Construct a similar triangle Construction of tangents to a circle	Students will be able to perform basic constructions divide a line segment in a given ratio construct a triangle similar to a given triangle construct tangents to a given circle	Students will be able to • perform basic constructions learnt in the previous class and justify the same • divide a line segment in a given ratio internally • construct a triangle similar to a given triangle as per given scale factor and justify the same • construct tangents to a given circle and as per the given conditions and justify the same
<u>Post-content</u> To work out extra practice questions	apply the knowledge learnt related to constructions	apply the concept learnt to solve various problems - acquire Problem solving skills based on the concept

Home Work /Assignments

NCERT exercise/solved examples given as home task.

Questions from sample papers to solve.

Selected questions from NCERT Exemplar.

Teacher's Activity	Student's Activity	Teacher's observation and Remedial
Teacher will give them problems related to their previous knowledge explain the concept of division of line segment in a given ratio (internal) and give them related problems explain the concept and give them related problems explain the concept with the help of an activity (Annexure 11) and give them related problems give them extra similar questions to solve	Students will do the constructions as per their previous knowledge divide a given line segment in a given ratio construct similar triangles as per given conditions construct tangents to a circle as per given conditions as instructed and solve the problems use the concepts to do different problems	Teacher will write his/her observations after the completion of the topic.

Teaching Aids: Smart board, Text book, Geometry set, Worksheets, Internet

Methodology/Innovative methods: Digital technology, Interactive, Lecturing, Note giving, Questioning, Discussion

Interdisciplinary Links: Physics, Mechanics, Engineering drawing, Economics

HOD

Coordinator

Vice- Principal

Principal

ACTIVITY NO. - 11

Subject	Mathematics
Class	X
Chapter/Unit	Constructions
Topic	Tangents to a circle
Time	20 minutes
Nature of Activity	Individual

What will I learn (Learning Outcome)?

Drawing a pair of tangents from a point P outside the circle drawn using a bangle.

Skills: Applying, Analyzing and Creativity

What I have to do?

To draw a pair of tangents from a point P outside the circle drawn using a bangle.

What do I require?

A sheet of paper, geometry box and a bangle

What do I need to know?

Drawing of perpendicular bisector of a line, a right angle

➤ **Teacher's Activity**

Teacher will ask students to draw the perpendicular bisector of a line.

How will I proceed?

➤ **Student's Activity**

- 1) Draw a circle using a bangle.
- 2) Locate the centre O of the circle by drawing the perpendicular bisector of two chords drawn from the three points taken on the circle.
- 3) Join the centre of the circle O with the point P taken outside the circle.
- 4) Draw the perpendicular bisector to get the mid-point of the OP.
- 5) With the point obtained in step 4 above draw a circle passing through the centre and the point taken outside the circle.
- 6) The two points of intersection of the original circle and the circle drawn in the step 5 above A and B (say) are the points of contact.
- 7) Join PA and PB.

What have I observed?

- 1) Length of PA = _____
- 2) Length of PB = _____

What have I learnt?

Length of PA _____ Length of PB (< / = / >)

What am I curious to learn?

Draw a right triangle ABC right angled at B with AB = 8 cm, BC = 6 cm. Draw a circle passing through A, B and mid-point P of AC. Then, draw a pair of tangents from the vertex C.

Let me evaluate myself

- 1) Draw a line segment AB of length 8 cm. Taking A as centre, draw a circle of radius 4 cm and taking B as centre, draw another circle of radius 3 cm. Construct tangents to each circle from the centre of the other circle.

- 2) Draw a ΔABC is such that AB = 5 cm, BC = 6 cm & $\angle ABC = 60^\circ$, then construct a Δ whose sides are $\frac{3}{5}$ of the corresponding sides of ΔABC .

- 3) Draw an isosceles triangle ABC in which AB = AC = 6 cm and BC = 5 cm. Construct a triangle PQR similar to ΔABC in which PQ = 8 cm. Also justify the construction
