It is expected that students will develop the following competencies after studying Mathematics- Part II syllabus in standard X

Area	Topic	Competency Statements
1. Geometry	1.1 Similar triangles 1.2 Circle	The students will be able to – • solve examples using properties of similar trianlges, properties of congruent traingles and Pythagoras theorem. • construct similar triangles. • be able to use properties of chords and tangents. • be able to construct tangents to a circle.
2. Co-ordinate Geometry	2.1 Co-ordinate geometry	• find distance between two points. • find the co-ordinates of a point dividing a segment in given ratio. • find slope of a line.
3. Mensuration	3.1 Surface area and volume	• find length of arc of a circle. • find areas of sector of a circle and segment of a circle. • compute surface areas and volumes of some three dimensional objects.
4. Trigonometry	4.1 Trigonometry	• solve examples using trigionometric identities • solve problems like measuring height of a tree, width of a river bed etc., using trigonometry.

Instructions for Teachers

Read the book in detail and grasp the content thoroughly.Take the help of activities to explain different topics, to verify the formulae etc.

Practicals is also a means of evaluation. Activities given can be used for this purpose. Encourage the students to think independently.Compliment a student if he solves an example by a different and logically correct method.

Suitable activities, other than those given in the text book, can be planned to understand the statements of the theorems and to develop the skill to solve problems.

List of some practicals (Specimen)

1. Cut out a triangular piece of card-board. Place a lit up candle or a small lamp on a table. Hold the triangle between a wall and the candle/ lamp. Observe the shadow of the triangle. Decide if the triangle and its shadow are similar. (What care will you take so that the triangle and its shadow are similar?)

2. Cut out two identical right angled triangles. Name the vertices of the triangles as A, B, C on both sides. Draw the altitude on the hypotenuse of one of them. Name the foot of the perpendicular as D. Cut the triangle on its altitude and obtain two triangles. State the correspondences by which the three triangles are similar with one another.

3. Draw a circle. Take three points - one on the circle, one in its interior and one in its exterior. Prepare a table, showing rough figures and stating how many tangents can be drawn to the circle through each of the three points.

4. Draw at least five different circles passing through two given distinct points indicating that innumerable circles can be drawn passing through them.

5. Take a geoboard on which nails are suitably fixed to verify properties of a circle. Prepare a figure using rubber bands for any one of the following theorems.

   (i) Inscribed angle theorem   (ii) Tangent secant theorem of angles

   (iii) Theorem of angles inscribed in opposite arcs of a circle.

6. Prepare a model of a circle and an angle. Show different arcs intercepted by the angle in different situations. Draw the corresponding figures in your note book.

7. Draw an angle and divide it into four equal parts using compass and ruler.

8. Take a beaker. Measure its height and radius of base. Calculate its capacity using the formula. Fill it fully with water. Measure the volume of the water with a measuring cylinder. Compare the two results and draw inference.

9. Take a paper cup of the shape of frustum of a cone. Measure the radii of its base and top and also its height. Using formula, calculate its capacity. Fill it fully with water and then measure the volume of the water. Compare the measured and the calculated volumes and verify the formula.

10. Cut two similar triangles out of a card-board. Decide by actual measurements -

    (i) Are their areas proportional to the squares of their perimeters ?

    (ii) Are their areas proportional to the squares of their medians ?