Class: 9th **Subject: Mathematics**

CLASSES REQUIRED	15
TOPIC	Circles
CONCEPT & SKILLS	(i) Definition and basic terms related to circles viz. Interior, exterior, circular region, radius, diameter, arc, minor arc, major arc, segment, minor segment, major segment. (ii) Angles in the same segment. (iii) Angles subtended by an arc. (iv) Perpendicular from the centre to a chord. (v) One and only one circle passes through three given non-collinear points. (vi) Equal chords of circle (or congruent circles are equidistant from the centre (or centres). (vii) Chords equidistant from the centre of a circle are equal in length. (viii) Cyclic quadrilateral and theorems. **Skills:** 1. Thinking skills 2. Comprehension skills 3. Geometrical skills
LEARNING OUTCOMES	1 Recall and review definition and basic terms related to circles. 2 To revise statements of theorems related to circles. 3 To appreciate the theorem angles in the same segment of a circle are equal. 4 To appreciate the theorem 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.
INSTRUCTIONAL TOOLS & REFERENCES	Text Book and reference.
PEDAGOGY	Discussion, Random questioning, intext questions.
ACTIVITY / ASSIGNMENT / RESEARCH	To find the centre when an arc is given and thus completing the circle.
ASSESSMENT	Assessment done on the basis of assignment and Individual Activity and Group Activity.

SYLLABUS FOR FORMATIVE & SUMMATIVE ASSESSMENT	FA-3: Quadrilaterals and linear equation in two variables. FA-4: Circles, Statistics SA-2: Quadrilaterals, Area of triangles and parallelograms, Circles, Statistics, Constructions, Surface Area and Volumes and Probability

CLASSES REQUIRED	15
TOPIC	Area of triangles and Parallelograms.
CONCEPT & SKILLS	1. Definition of parallelogram and area of parallelogram. 2. If two parallelograms are on the same base and between same parallels, they are equal in area and vice-versa. 3. If two triangles are on the same base and between the same parallels, they are equal in area and vice-versa. 4. If a triangle and a parallelogram are on the same base and between the same parallels, area of triangle = ½ area of parallelogram. 5. Median of a triangle divides it into two triangles of equal area. 6. Two congruent figures have equal areas and by the converse need not to be true. **Skills:** 1. Geometrical skills 2. Logical skills 3. Thinking skills
LEARNING OUTCOMES	1. To recall formulae of area of all types of quadrilateral. 2. To identify the figures on the same base and between the same parallels. 3. To understand the area of parallelogram on the same base and between the same parallels are equal. 4. To apply the concept learnt about the area of parallelogram and triangle on the same base and between the same parallels. 5. To understand the area of triangles on the same base and between the same parallels are equal. 6. To understand the triangles equal in area and on same base lie between same parallels.
INSTRUCTIONAL TOOLS & REFERENCES	Text Book and Reference.
PEDAGOGY	Discussion and Random questioning.
ACTIVITY / ASSIGNMENT / RESEARCH	To recognise the figures on the same base and between the same parallels.
ASSESSMENT	Assessment done on the basis of assignment and Individual Activity and Group Activity.

SYLLABUS FOR FORMATIVE & SUMMATIVE ASSESSMENT	FA-3: Quadrilaterals and linear equation in two variables. FA-4: Circles, Statistics SA-2: Quadrilaterals, Area of triangles and parallelograms, Circles, Statistics, Constructions, Surface Area and Volumes and Probability

CLASSES REQUIRED	8
TOPIC	Linear Equation in Two Variables
CONCEPT & SKILLS	1. Linear equation. 2. Solutions of linear equation. 3. Graph of a linear equation. 4. Equations of lines parallel to the x-axis and y-axis. 5. Area of figures formed by plotting solutions of two equations.
LEARNING OUTCOMES	1. To recognise a linear equation. 2. To identify coefficients and constants of linear equation in two variables. 3. To find the solution of linear equation in two variables. 4. To recognise the equations parallel to x-axis and y axis. 5. To find the area of figures formed by drawing the graphs of two or more equations.
INSTRUCTIONAL TOOLS & REFERENCES	Text Book and Reference.
PEDAGOGY	Concept formation, Questioning , Discussion.
ACTIVITY / ASSIGNMENT / RESEARCH	Find the area of triangle formed by drawing the graph of given two equations.
ASSESSMENT	Assessment done on the basis of assignment and Individual Activity and Group Activity.
SYLLABUS FOR FORMATIVE & SUMMATIVE ASSESSMENT	FA-3: Quadrilaterals and linear equation in two variables. FA-4: Circles, Statistics SA-2: Quadrilaterals, Area of triangles and parallelograms, Circles, Statistics, Constructions, Surface Area and Volumes and Probability

CLASSES REQUIRED	18
TOPIC	Quadrilaterals
CONCEPT & SKILLS	1. Definition of quadrilaterals 2. Definition of different types of quadrilaterals. 3. Angle sum property of a quadrilateral. 4. Properties of a quadrilateral. 5. Mid Point Theorem and the converse of mid point theorem. **Skills:** 1. Geometrical skill 2. Thinking Skill 3. Logical skill
LEARNING OUTCOMES	1. To recall and review the knowledge of various types of quadrilaterals. 2. To explore that sum of interior angles of a quadrilateral is 360^0. 3. To apply the knowledge attained about the quadrilateral in solving the problems.
INSTRUCTIONAL TOOLS & REFERENCES	Text Book and reference.
PEDAGOGY	Discussion, concept formation, Random questioning.
ACTIVITY / ASSIGNMENT / RESEARCH	To verify the midpoint theorem by paper cutting and pasting.
ASSESSMENT	Assessment done on the basis of assignment and Individual Activity and Group Activity.
SYLLABUS FOR FORMATIVE & SUMMATIVE ASSESSMENT	FA-3: Quadrilaterals and linear equation in two variables. FA-4: Circles, Statistics SA-2: Quadrilaterals, Area of triangles and parallelograms, Circles, Statistics, Constructions, Surface Area and Volumes and Probability