BUDHA DAL PUBLIC SCHOOL PAIALA

ANNUAL PEDAGOGICAL PLAN SESSION 2023 - 24

CLASS: XII

SUBECT: MATHEMATICS

Duration (No. of Days)	Theme/ Sub-theme Topic Days	Learning Objectives		Resources and activities	Expected Learning Outcomes	Innovative/Art integration/ Experiential learning/ interdisciplinary
		Subject Specific (Content Based)	Behavioral (Application based)			
35 Days	Matrices & Determinants	To enable the students to understand operation on matrices, application of matrices, solution of equation by matrix method. Its properties, Meaning of determinant, evaluation of determinant for asquare matrix, Solution of determinants. Invertible Matrices and proof of uniqueness of inverse if it exists. Matrix method.	Through problems based onMatrix and Determinants, they will develop 1)Imagination 2)Systematic approach3)To handle real life situation	NCERT	Students learnt about: operation on matrices, application of matrices, solution of equation by matrixmethod. Its properties, Meaning of determinant, evaluation of determinant for a square matrix, Solution of determinants.	Experiential learning: students will be asked to calculate Gross profits in domestic products and verify using matrix multiplication
15 Days	Relations & Functions	To enable the students understand Equivalence relations, bijective functions.Different types of relations and functions,finding domain and range.	Through problems based onRelations and functions they will Develop: 1)Logical thinking 2)Critical thinking 3)Imagination	NCERT To verify that the relation R in the setL of all lines in a plane, defined byR = {(l, m) : l|| m} is an equivalence relation.	Students learnt about: Equivalence relations, bijective functions. Different types of relations and functions, finding domainand range.	Art integration: Arrow diagrams ,graphs of functions Innovative example: The name of person and the reserved seat no. of that person in a bus is simple daily life example of one – one function

15 Days	**Inverse Trigonometric Functions**	**To enable the students to find solutions of problems of inverse trigonometric functions.Inverse trigonometric functions ,its domain and range ,Graphs of inverse trigonometric functions**		**NCERT**	**Students learned about :Solutions of problems of inverse trigonometric functions. Inverse trigonometric functions ,its domain and range ,graphs of inverse trigonometric functions**	**Art integration: Graphs , figures , mapping diagrams.**
20 Days	**Continuity and Differentiability**	**To enable the students to understand** **1) Continuity and differentiability.** **2) Change in one variable when the othervariable changes (i.e. meaning of differentiation)** **3) Differentiation of trigonometric function, logarithmic function, exponential, implicit function, inverse of trigonometric function,** **4) Second order derivative**	**To enable the students to understand** **1) Derivatives are used in**	**NCERT** **To understand the concepts of**	**Students learned about :** **1) Continuity and differentiability of a function.** **2) To differentiate trigonometri c function, logarithmic function, exponential& parametric**	**Innovative examples;** **The water flows in the rivers is continuous,** **The flow of time in human life is continuous i.e. you are getting older etc. will be discussed**

10 Days	**Applications of Derivatives**	**functions, parametric form and higher orderderivatives.** **1) Rate as a measure** **2) Increasing and decreasing function** **3) maxima and minima (FIRST DERIVATIVE TEST and Second derivative test)**	**economics to find out cost function and application skill will developed.** **Through problems based on AOD, they will develop** **1)Imagination** **2)Systematic approach** **3)To handle real life situation**	**decreasing and increasing functions.** **To understand the concepts of local maxima, local minima and point of inflection.** **To construct an open box of maximum volume from a given rectangular sheet by cutting equal squares from each corner.** **To verify that amongst all the rectangles of the same perimeter, the square has the maximum area.**	**function, inverse of trigonometric function,** **3)Higher order derivatives.** **Through explanation of graph creative thinking will be imbibed.** **1.Rate as a measure** **2.Increasing and decreasingfunction** **3. maxima and minima** **4.Imagination** **5. Systematic approach** **6. To handle real life situation**	**Innovative/Art Integration:** **Increase of exponential increase of population with in last 50 years by drawing graph such examples will be discussed.**	
20 Days	**Indefinite Integrals**	**Students will understand** **1) integration** **2)Different methods of integration**	**Through problems based on integration** **, they will develop** **1)Manipulation(assumption)** **2) Logical thinking** **3) Systematic approach**	**NCERT**	**Students learned about :1)integration** **2)Different methods of integration** **By different approaches they learn** **3) Manipulation** **4) Logical thinking** **5) Systematic approach**		

	Definite Integrals	**To enable the students to understand** **1) the meaning of Definite integral andproperties of definite integrals.** **2)To enable the students to understand Limitas a sum.**	**Through approach adopted for problems** **1)Critical thinking** **2)Imagination** **3) indirect approach**	**NCERT**	**Students learned about :** **1) Definite integral andproperties of definite integrals.** **2)Integration as Limit as asum.** **3))Critical thinking** **4)Imagination** **5) indirect approach**	
	Applications of Integrals	**To enable the students to find the Area under simple curves, especially lines, circles, parabolas/ellipses(in standard form only)**	**To enable the students to develop** **1) Critical thinking tovisualize shapes** **2) Accuracy for calculating area**	**NCERT**	**Students learned about :** **1) to find the Area of bounded curve** **2)Critically think andvisualize the shapes** **3) Accurately calculate area**	**Art integration; Figures , shapes of ellipse, circles, parabolas**
15 Days	**Differential equation**	**To enable the students to find** **1) the function when differential equations isgiven.** **2)Degree and order of differential equations** **3) solution of various forms of differentialequations** **4)general and particular solution.** **5)Solution of linear differential equation** **6)Solutions of homogenous differential equations of first order and first degree**	**To enable the students to understand** **1) Different types solution** **2) Different approaches forsolution to problems**		**Students learned about :** **1) the function when differential equations is given.** **2)Degree and order of differential equations** **3) solution of various forms of differential equations**	**Experiential learning: formation of differential equation to explain the process of cooling of boiled water to a given room temperature**

					4)general and particular solution. 5) Different types solution 6)Different approaches for solution to problems	
15 Days	Vectors	To enable the students to understand theconcept of 1)vectors and its usage 2)Types of vectors their properties 3) Representation of vectors 4) dot and cross product of vectors 5)area of triangle and quadrilateral.	Through the concept of vectors and its usage students will attain 1) Development of visualization 2)understanding need for different types of quantities	NCERT	Students learned about : 1)vectors and its usage 2)Types of vectors their properties 3) Representation of vectors 4) dot and cross product of vectors 5)area of triangle and quadrilateral. 6) to visualize vectors 8)understanding different types of quantities and its importance	Experiential learning/ Javelin throw, basket ball throw , kicking a football etc. are the daily life examples of vectors will be discussed

15 Days	Three Dimensional Geometry	To enable the students to understand theconcept of 1) Straight line in space 2) Equation of line in Cartesian and vectorform 3) Angle between two lines 4) shortest distance between two lines, and shortest distance in 3 Dimensionalgeometry 5) Foot of perpendicular from a point to theline	Through approach adopted for problems students will attain 1)Imagination 2)Systematic approach 3)Efficiency 4)Creativity	NCERT PPT	Students learned about : 1)Equation of line in Cartesian and vector form 2) Angle between two lines and shortest distance between them and shortest distance in3 Dimensional geometry 5)Foot of perpendicular from apoint to the line	Innovative method: Students would be asked to examine geometry around home. To find shapes of 2-D and 3-D
25 Days	Probability	To enable the students to understand: 1)Addition theorems on probability 2)Conditional probability 3)Multiplication theorems on probability 4)Independent events 5)Total probability and Baye's Theorem 6)Random variable and its probability distribution 7)Mean of random variable	Through this chapter students will develop 1)Logical thinking to Handling Risk 2)Imagination for Manipulating situation for better result	NCERT To explain the computation of conditional probability of a given event A, when event B has already occurred, through an example of throwing a pair of dice.	Students learned/ developed : 1)Addition and Multiplication theorems on probability 2)Conditional probability 4)Independent events, Total probability and Baye's Theorem 5) Binomial& Probability distribution 6) Mean 7)Logical thinking to Handle Risk 8)Imagination for Manipulating situation	Experiential learning: Prediction of monsoon from past data Predicting mortality of infants

20 Days	**Linear Programming**	**To enable the students to understand:** **1)Introduction** **2)Related terminology such as constraints, objectives, functions, optimization, graphical method of solution for problems in two variables, feasible and infeasible regions and their solutions**	**Through this chapter students will attain** **1) To handle optimization problems(Efficiency)** **2) develop Systematic approach** **3)Differentiate constraint from problem.**	**NCERT** **Through plotting of graph (Graphical method.)**	**Students learned about** **1) Objective function &Constraints** **2) Feasible solution -Optimal solution** **3)Iso-profit line** **4) Corner point method for Bounded region and Un Bounded region** **5) Differentiate constraint from problem.** **6)optimization problems** **7) Systematic behavior & Efficiency**	**Experiential learning:** **To minimize the cost of the food, meeting the dietary requirements of the adolescent students of your school.** **Art integration: Graphs, computers.**
January	**Revision**	**Pre- Boards**				