



SARALA BIRLA PUBLIC SCHOOL



**Birla Knowledge City, Ranchi Purulia Highway
Village –Ara, P.O.- Mahilong
Ranchi – 835103, Jharkhand**

SYLLABUS

STD – XII (SCIENCE)

SESSION – 2023-24

Name: _____

UID No. : _____

Class and Section: _____

SUBJECT: ENGLISH (301)

Prescribed Books:	1)	ENGLISH TEXT BOOK (FLAMINGO)- NCERT
	2)	SUPPLEMENTARY READER (VISTAS)- NCERT
Month	Total No. of periods	Lesson/Chapter
April		FLAMINGO-The Last Lesson, My Mother at Sixty-six VISTAS-The Third Level Notice Writing
May		FLAMINGO- Lost Spring, Deep Water Article writing
June		FLAMINGO- Keeping Quiet VISTAS: The Tiger King Invitations and Replies
July		FLAMINGO- The Rattrap, A Thing of Beauty VISTAS- Journey to the End of the Earth Application for a Job with Bio-Data or a Resume
August		FLAMINGO- Indigo, Poets and Pancakes VISTAS- The Enemy Letter to the Editor
September		REVISION HALF YEARLY EXAMS
October		FLAMINGO- The Interview, Aunt Jennifer's Tigers VISTAS- On the Face of It Report writing
November		FLAMINGO- Going Places, A Roadside Stand VISTAS- Memories of Childhood
December		Revision
January		Revision
Syllabus for Term Exams and Periodic Test		
TERM-1		
Periodic Test 1		Unseen Passage, Notice writing, The Last Lesson
Periodic Test 2		Unseen Passage, Article writing, Lost Spring, Keeping Quiet, The Third Level
Half yearly exam- Portion taught from April to August		DISTRIBUTION OF MARKS READING SKILLS- 22 MARKS CREATIVE WRITING SKILLS- 18 MARKS LITERATURE- 40 MARKS Assessment of Listening Skills - 05 marks Assessment of Speaking Skills – 05 Marks Project Work – 10 marks
TERM-2		
Periodic Test 3		Unseen passage, Letter to the Editor, The Interview, Aunt Jennifer's Tiger
Periodic Test 4 Annual Exam		Unseen passage, Report writing, On the Face of It, A Roadside Stand
PRE- BOARD 1 AND PRE-BOARD 2		Complete syllabus DISTRIBUTION OF MARKS READING SKILLS- 22 MARKS CREATIVE WRITING SKILLS- 18 MARKS LITERATURE- 40 MARKS Assessment of Listening Skills - 05 marks Assessment of Speaking Skills – 05 Marks Project Work – 10 marks

SUBJECT: PHYSICS (042)

Prescribed Books:	1)	NCERT Textbook (Part 1 & Part 2)
	2)	New Simplified PHYSICS - S.L. ARORA (Ref Book)
	3)	NCERT Exemplar
	4)	Physics Practical Book – Arihant Publication
Month	Total No. of periods	Lesson/Chapter
April		Unit -1 Chapter 1 : Electric Charges And Fields Chapter 2 : Electrostatic Potential And Capacitance
May		Unit -2 Chapter 3 : Current Electricity Unit - 3 Chapter 4 : Moving Charges And Magnetism
June		Unit - 3 Chapter 5 : Magnetism And Matter Unit - 5 Chapter 8 : Electromagnetic Waves
July		Unit - 4 Chapter 6 : Electromagnetic Induction Chapter 7 : Alternating Current Unit - 6 Chapter 9 : Ray Optics And Optical Instruments
August		Unit - 6 Chapter 9 : Ray Optics And Optical Instruments Chapter 10: Wave Optics
September		Revision + Half Yearly Exam
October		Unit - 7 Chapter 11 : Dual Nature Of Radiation And Matter Unit- 8 Chapter 12 : Atoms Chapter 13 : Nuclei
November		Unit - 9 Chapter 14 : Semiconductor ,Electronics : Materials, Devices and simple circuits
December		Revision + Pre-Board 1
January		Pre-Board 2
February		Board Practical Exam
March		Board Exam
Syllabus for Term Exams and Periodic Test		
PERIODIC TEST-1 & 2		
Periodic Test	1) Chapter 1: Electric Charges and Fields	
	2) Chapter 2: Electrostatic Potential and Capacitance Chapter 3: Current Electricity	
PERIODIC TEST-3 & 4		
Periodic Test	3) Chapter 9: Ray Optics and Optical Instruments Chapter 10: Wave Optics Chapter 8: Electromagnetic Waves	
	4) Chapter 11: Dual nature of radiation and matter Chapter 12 & 13: Atoms and Nuclei	

Activities	1) Record of at least 8 experiments (with a minimum of four from each section)
	2) Record of at least 6 activities with a minimum of three, each from section A & section B
	3) Investigatory Project- Working model and handwritten report of the project
Term 1	Chapter 1 : Electric Charges And Fields
	Chapter 2 : Electrostatic Potential And Capacitance
	Chapter 3 : Current Electricity
	Chapter 4 : Moving Charges And Magnetism
	Chapter 5 : Magnetism And Matter
	Chapter 6 : Electromagnetic Induction
	Chapter 7 : Alternating Current
	Chapter 8 : Electromagnetic Waves
Pre-board	Whole syllabus

SUBJECT: CHEMISTRY (043)

Prescribed Books:	1)	NCERT Text Book (Part 1+ Part 2)
	2)	NCERT Exemplar
	3)	Chemistry Practicals- Dinesh Publication (Lab Book)
	4)	
Month	Total No. of periods	Lesson/Chapter
April		Ch:6-Haloalkanes and Haloarenes Ch:7-Alcohols, Phenols and Ethers Ch:8-Aldehydes, Ketones and Carboxylic Acids.
May		Ch:8-Aldehydes, Ketones and Carboxylic Acids. Ch:9-Amines.
June		Ch:10-Biomolecules Ch:1-Solution
July		Ch:2-Electrochemistry Ch:3-Chemical Kinetics
August		Revision & Half Yearly Exam
September		Revision & Half Yearly Exam
October		Ch:5-Coordination Compounds Ch:4-The d- & f-block elements
November		Ch:4-The d- & f-block elements Chapterwise Revision.
December		Pre Board/Revision
January		Pre Board/Revision/Practical Exam(Board)
February		Practical Exam (Board)
March		Final Exam (Board)
Syllabus for Term Exams and Periodic Test		
TERM-1		
Periodic Test	1)	Ch:6-Haloalkanes & Haloarenes
	2)	Ch:7-Alcohols, Phenols & Ethers Ch:8-Aldehydes, Ketones and Carboxylic Acids. Ch:9-Amines
Activities		Volumetric Analysis
		Content Based Experiment
		Salt Analysis
		Project Work

TERM-2 (Annual)	
Periodic Test	3) Ch:1-Solution Ch:2- Electrochemistry Ch:3-Chemical Kinetics
	4) Ch:4-The d-& f-block elements Ch:5-Cordination Compounds
Activities	Volumetric Analysis
	Content Based Experiment
	Salt Analysis
	Project Work
Term 1	Ch:1-Solution Ch:2- Electrochemistry Ch:3-Chemical Kinetics
	Ch:6-Haloalkanes and Haloarenes Ch:7-Alcohols, Phenols and Ethers Ch:8-Aldehydes, Ketones and Carboxylic Acids.
	Ch:9-Amines.
	Ch:10-Biomolecules
Term 2/Annual Exam	Ch:1-Solution Ch:2- Electrochemistry Ch:3-Chemical Kinetics
	Ch:4-The d- & f-block elements Ch:5-Cordination Compounds
	Ch:6-Haloalkanes and Haloarene Ch:7-Alcohols, Phenols and Ethers Ch:8-Aldehydes, Ketones and Carboxylic Acids Ch:9-Amines
	Ch:10-Biomolecules.

SUBJECT: BIOLOGY (044)

Prescribed Books:	1)	Textbook for Class 12 (NCERT)
	2)	Laboratory Manual in Biology
Month	Total No. of periods	Lesson/Chapter
April		Unit 6: Reproduction Chapter 1: Sexual Reproduction in Flowering Plants Chapter 2: Human Reproduction
May		Chapter 3: Reproductive Health Unit 7: Genetics and Evolution Chapter 4: Principles of Inheritance and Variation
June		Chapter 5: Molecular Basis of Inheritance Chapter 6: Evolution Unit 8: Biology in Human Welfare Chapter 7: Human Health and Diseases
July		Chapter 8: Microbes in Human Welfare Unit 9: Biotechnology Chapter 9: Biotechnology: Principles and Processes
August		Chapter 10: Biotechnology and its Applications Unit 10: Ecology Chapter 11: Organisms and Population Chapter 12: Ecosystem
September		Revision and Term 1 Examinations
October		Chapter 13: Biodiversity and Conservation

November		Revision
December		Revision
January		Pre- Board Examination
Syllabus for Term Exams and Periodic Test		
TERM-1		
Periodic Test	1) PT 1: Sexual Reproduction in Flowering Plants	
	2) PT 2: Human Reproduction, Reproductive health, Principles of Inheritance and Variation	
Term-1	Chapter 1: Sexual Reproduction in Flowering Plants Chapter 2: Human Reproduction Chapter 3: Reproductive Health Chapter 4: Principles of Inheritance and Variation Chapter 5: Molecular Basis of Inheritance Chapter 6: Evolution Chapter 7: Human Health and Diseases	
Activities	Activities: Term 1: Experiments: 1) Prepare a temporary mount to observe pollen germination. 2) Study the plant population density by Quadrat method 3) Study the plant population frequency by Quadrat method. 4) Prepare a temporary mount of onion root tip to study mitosis. 5) Isolate DNA from available plant material such as spinach, green pea seed, papaya etc. Observation/ Spotting: 1) Flowers adapted to pollination by different agencies(wind, insects, birds) 2) Pollen germination on stigma through a permanent slide or scanning electron micrograph. 3) Identification of stages of gamete development, ie, T.S. of testis and T.S. of ovary through permanent slides (from grasshopper/mice). 4) Meiosis in onion bud cell or grasshopper testis through permanent slides. 5) T.S. of blastula through permanent slides(Mammalian) 6) Mendelian inheritance using seeds of different colour /sizes of any plant.	
TERM-2 (Annual)		
Periodic Test	PT 3: Microbes in Human Welfare, Biotechnology: Principles and Processes and Biotechnology and its Applications.	
	PT 4: Organisms and Populations, Ecosystem and Biodiversity and Conservation	
Activities	Activities: Term 2: Observation/ Spotting: 7) Prepare Pedigree charts of any one of the genetic traits such as rolling tongue, blood groups, ear lobes, widow's peak and colour blindness. 8) Controlled pollination -emasulation, tagging and bagging. 9) Common disease causing organisms like <i>Ascaris</i> , <i>Entamoeba</i> , <i>Plasmodium</i> , any fungus causing ringworm through permanent slides, models or virtual images or specimens. Comment on symptoms of disease that they cause.	
Annual Exam	Chapter 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13	
	Whole Book	

SUBJECT: STANDARD MATHEMATICS (041)

Prescribed Books:		NCERT NCERT EXEMPLAR
Month		Topics/Lessons
April		3. Matrices 4. Determinants
May		1. Relations and Functions 2. Inverse Trigonometric Functions
June		5. Continuity and Differentiability
July		6. Application of Derivatives 7. Integrals
August		8. Application of Integrals 9. Differential Equations Revision for Half yearly exam
September		Half yearly exam
October		10. Vectors 11. Three-dimensional Geometry
November		12. Linear Programming 13. Probability
December		REVISION PRE BOARD
January		PRE BOARD
February		
March		
Syllabus for Term and Periodic Test		
Term 1 (Half Yearly Exam)		
Periodic Test-1		Matrices Determinants
Periodic Test-2		Continuity and Differentiability Application of Derivatives
Half Yearly Exam		Chapter – 1 to 8
Periodic Test-3		Vector Three-dimensional Geometry
Periodic Test-4		Probability

SUBJECT: APPLIED MATHEMATICS (241)

Prescribed Books:		NCERT NCERT EXEMPLAR
Month		Topics/Lessons
April		3. Matrices 4. Determinants
May		1. Numbers, Quantification and Numerical Applications 2. Numerical Inequalities
June		5. Differentiation
July		6. Application of Derivatives 10. Inferential Statistics
August		7. Integrals 8. Differential Equations Revision for Half yearly exam

September		HALF YEARLY EXAM
October		11. Time based data 12. Perpetuity, Sinking Funds and EMI 14. Returns, Growth and Depreciation
November		9. Probability 15. Linear Programming Revision for Pre-board exam
December		Pre-board exam
January		Pre- board exam
February		
March		
Syllabus for Term and Periodic Test		
Term 1 (Half Yearly Exam)		
Periodic Test-1		Matrices Determinants
Periodic Test-2		Differentiation Application of derivatives
Half Yearly Exam		Ch- 1 to 8 and Ch-10
Term 2 (Annual Exam)		
Periodic Test-3		Time based data Perpetuity, Sinking Funds and EMI Returns, Growth and Depreciation
Periodic Test-4		Probability
Annual Exam		

SUBJECT: COMPUTER SCIENCE (083)

Prescribed Books:	1. Computer Science with Python by Sumita Arora (Dhanpat Rai & Co.) 2. Computer Science with Python by Preeti Arora (Sultan Chand)
Month	Lesson/Chapter
April	Unit I. Programming and Computational Thinking-2 (40 Marks)Ch. 1 Python Revision Tour-I Tokens, Simple Input and Output, Expressions, Flow of Control (if, if..else.., if..elif..., Nested if...), Looping Statements, jump statements, Nested Loops
	Ch. 2 Python Revision Tour-II String handling, Lists in Python, Tuples in Python, Dictionaries in Python
May	Ch. 3 Working with Functions Introduction, Calling/Invoking/Using a Function, Types of Functions, Flow of execution in a Function Call, Arguments and Parameters
June	Ch. 4 Using Python Libraries What is Library, Importing Modules in a Python program, Using Standard Libraries, Creating a Python Library
July	Ch. 5 File Handling Basic File input/output operation Ch. 9 Data Structures: Stack & Queue using Lists Elementary Data Representation Linear Lists Arrays, Stack, Queue, Linked Lists, Trees
August	Ch. 9 Data Structures: Stack & Queue using Lists Operation on Data Structures, Stack (Implementation & Applications), Queue (Implementation, Variations & Applications)
September	REVISION + Half Yearly Examination

October	Ch.12 MySQL SQL Revision Tour Relational Data Model, Accessing Database in MySQL, Creating Tables, Inserting Data, Simple Queries through Select command Ch.13 More on SQL Order by clause, Aggregate Functions, Types of SQL Functions, Grouping Result
November	Ch.15 Interface Python with MySQL Connecting to MySQL from Python Ch.10 Computer Networks-I Introduction, Types, Network Devices/Hardware, Internet of Things Ch.11 Computer Networks-II Modulation Techniques, Network Security, Introduction to Web Services, E-Commerce
December	Revision
Syllabus for Term Exams and Periodic Test	
Periodic Test 1	Chapter 1 to 4
Periodic Test 2	Chapter 5 to 9
Term 1	Chapter 1 to 9
Periodic Test 3	Chapter 12, 13, 15
Pre-Board	Complete Syllabus as per CBSE Pattern

SUBJECT: INFORMATICS PRACTICES (065)

Prescribed Books:	1. Informatics Practices by Sumita Arora (Dhanpat Rai & Co.) 2. Informatics Practices by Preeti Arora (Sultan Chand & Co.)
Month	Chapter/Topics
April	Unit-1: (Data Handling using Pandas - I) Introduction to Python libraries- Pandas, Matplotlib. Data structures in Pandas - Series and Data Frames.
May	Importing/Exporting Data between CSV files and Data Frames.
June	Data handling using Pandas – II Descriptive Statistics: max, min, count, sum, mean, median, mode, quartile, Standard deviation, variance. Data Frame operations, Handling missing values.
July	Data Visualization Purpose of plotting; drawing and saving following types of plots using Matplotlib – line plot, bar graph, histogram, pie chart, frequency polygon, boxplot and scatter plot. Customizing plots: color, style (dashed, dotted), width; adding label, title, and legend in plots.
August	Unit 2: Database Query using SQL Math functions, Text functions, Date Functions, Aggregate Functions, Querying, Operations on Relations, Importing/Exporting Data between MySQL database and Pandas. Operations on Relations.
September	Half Yearly Exam
October	Unit 3: Introduction to Computer Networks
November	UNIT 4: Societal Impacts
	Revision, Project Work
December	Revision + Pre-Board 1
January	Revision + Pre-Board 2
Syllabus for Term Exams and Periodic Test	
TERM-1	
Periodic Test	PT-1: Data Handling- Python Pandas
	PT-2: Plotting with Pyplot
	PT-3: Introduction to Computer Networks
Half Yearly	Unit-1 and Unit-2
Pre-Board(s)	Complete Syllabus

SUBJECT: ECONOMICS (030)

Prescribed Books	1)	NCERT
Month	Total No. of periods	Lesson/Chapter
April		Introductory Macroeconomics: Circular Flow of Income Basic concepts of Macroeconomics Indian Economic Development: India at the eve of independence Indian Economy (1950-1990)
May		Introductory Macroeconomics: National Income & Related aggregates Indian Economic Development: Continue....Indian Economy (1950-1990)
June		Introductory Macroeconomics: Measurement of National Income Indian Economic Development: Economic Reforms since 1991
July		Introductory Macroeconomics: Money & Banking Indian Economic Development: Human capital formation Rural development
August		Introductory Macroeconomics: Determination of Income and Employment Indian Economic Development: Employment
September		Revision +Half Yearly Exam
October		Introductory Macroeconomics: Govt. Budget & the Economy Balance of Payment
November		Indian Economic Development: Environment & Sustainable development Development experience of India
December		Revision
January		Revision
February		Revision + Annual Exam
March		
SYLLABUS FOR TERM EXAMS AND PERIODIC TEST		
Periodic Test1		Introductory Macroeconomics: Circular Flow of Income Basic Concepts of Macroeconomics Indian Economic Development: India at the eve of independence
Periodic Test2		Introductory Macroeconomics: Measurement of National Income Money and Banking Determination of Income and Employment Indian Economic Development: Indian Economy (1950-1990) Economic Reforms since 1991 Human capital formation Rural development

Half Yearly	Topics according to the syllabus of April to August
Periodic Test3	Introductory Macroeconomics: Aggregate Demand & Related Concepts Govt. Budget & the Economy Indian Economic Development: Employment Environment & Sustainable development Development experience of India
Pre Board	Complete syllabus

SUBJECT: PHYSICAL EDUCATION (048)

Prescribed Books	1)	Saras NCERT Test book
	2)	Full Marks, Physical Education (Dr. DS Yadav)
Month	Total No. of periods	Lesson/Chapter
April		Unit I : Management of Sporting Events
May		Unit II: Children and Women in Sports
June		Unit III : Yoga as Preventive measure for Lifestyle Disease Unit IV : Physical Education and Sports for (CWSN)
July		Unit V : Sports and Nutrition
August		Unit VI : Test and Measurement in sports Unit VII: Physiology and Injuries in Sports
September		
October		Unit VIII : Biomechanics and Sports Unit IX : Psychology and sports
November		Unit X : Training in Sports
December		Revision and Pre Board
January		Pre Board 2 & Final Practical
February		Preparation leave
March		Annual Exam
Syllabus for Term Exams and Monthly Test		
Term-1		
Periodic Test-1		Unit I : Management of Sporting Events Unit II: Children and Women in Sports
Periodic Test-2		Unit III : Yoga as Preventive measure for Lifestyle Disease Unit IV : Physical Education and Sports for (CWSN) Unit V : Sports and Nutrition
Periodic Test--3		Unit VI : Test and Measurement in sports Unit VII: Physiology and Injuries in Sports
Periodic Test-4		Unit VIII : Biomechanics and Sports Unit IX : Psychology and sports Unit X : Training in Sports
Pre Board		December 2023 Complete syllabus
Pre Board 2		January 2024 Complete Syllabus
Final Exam		March 2024 Complete Syllabus

SUBJECT: PAINTING (049)

Prescribed Books:		
Month		Topics/Lessons
April	4	UNIT 1 -Pal school -Western Indian painting or Jain school -Central Indian painting PT 1 EXAM
May	3	UNIT 2 -Main features of Rajasthani school -Study of following Rajasthani paintings -Maru Ragini -Chaugan Players -Krishna on swing -Radha bani thani -Bharat meets Rama at Chitrakut
June	2	UNIT 3 -The Pahari school -Origin and development -Sub schools-Basohli,Guler,Kangra,Chamba,Garhwal -Study of following Pahari paintings -Krishna with Gopies -,Nand Yasoda and Krishna with Kinsman going to Vrindavan. -Nature study with watercolour.(practical) -Still life with pencil shading (practical)
July	4	UNIT 4 -The Mughal school -Origin and development -Main features of Mughal school -Study of following paintings:- -Krishna lifting mount Govardhan - Kabir and Raidas -Marriage procession of Dara Shukoh -Falcon on a Bird Rest PT 2 EXAM
August	4	UNIT 5 -The Deccan school -Origin and development -Main features of Deccan school -Study of following paintings:- -Hazrat Nizamuddin Auilya and Amir Khusro -Chand Bibi Playing Polo.
September		TERM 1 EXAM
October	3	UNIT 6 -The Bengal school of painting and the modern tends of Indian art. -Evolution of the Indian Flag. -Origin and development of Bengal school. -Main features of Bengal school. -Contribution of Indian artists in the struggle for-National freedom movement.

		-Study of following paintings:- -Journeys end -Shiva and Sati -Radhika -Meghdoot
NOVEMBER	3	-The modern trends of Indian art, An introduction, study of paintings-(Rama vanquishing the pride of ocean,mother and child, haldi grinders, Mother Teresa) PT 3 EXAM -Graphics(children ,devi, of walls, man, woman and tree, -sculpture -Triumph of labour, Santhal family, Cries un heard, Ganesha
December	3	
January		PT 4 EXAM
February		
March		
Syllabus for Term and Periodic Test		
Term 1 (Half Yearly Exam)		
Periodic Test-1		UNIT 1
Periodic Test-2		UNIT 2,3,4
Half Yearly Exam		UNIT 1,2,3,4
Term 2 (Annual Exam)		
Periodic Test-3		UNIT 5,6
Periodic Test-4		GRAPHICS,SCULPTURE
Annual Exam		

SUBJECT: HVM (034)

Prescribed Books:	1)	RAAG PARICHAY- PART 1& PART 2
Month	Total No. of periods	Lesson/Chapter
April		Theory – Definitions Alankar,Aalap,Taan, Meend,Gamak Practical – Rag Bhairav Drut khayal with few taans Taal – Jhaptaal with thah dugun & Chaugun
May		Theory – Detail study of the following Sangeet Ratnakar Practical – Rag Bhairav continue Taal – Rupak Taal with thah dugun & chaugun
June		Theory - Historical development of time theory of ragas Practical – Rag Bageshri Drut khayal with few taans Taal – Dhamar taal thah with dugun & Chaugun

July		Theory – Critical study and writing in notation the composition of the prescribed Ragas .Rag - Bhairav Rag Bageshri Practical – Recognise the Ragas from phrases of swaras and elaborating them.
August		Revision of both the Ragas Taal with hand movements.
September		Term –1
October		Theory – Definitions - Gram, Murchana,Kan,Khatka,Murki, Practical – Rag Malkauns,Drut khayal with few taans
November		Theory – Detail study of Sangeet parijat Knowledge of tuning of the Tanpura Practical – Rag Malkauns Vilambit khayal
December		Theory – Life sketch of Ustaad Bade Ghulam Ali khan Faiyaz Khan Practical – Notation,Rag recognition
January		Theory – Life sketch of pt.Krishna Rao Shankar pandit Notation system,
February		Practical — Revision
March		Term 2
Preodic Test 1		Definitions, Raag Bhairav detail description
Periodic Test-2		Definitions,Taal Jhaaptaal, Sangeet Ratnakar,
Activities		1) Assignment
		2) —
Half Yearly Exam		Definitions - All, Sangeet Ratnakar, Detail description of both the Ragas,& Taal description with hand movements
TERM-2 (Annual)		
Periodic Test-3		—
Periodic Test-4		—
Activities		1) Assignment
		2) —
Annual Exam		-

